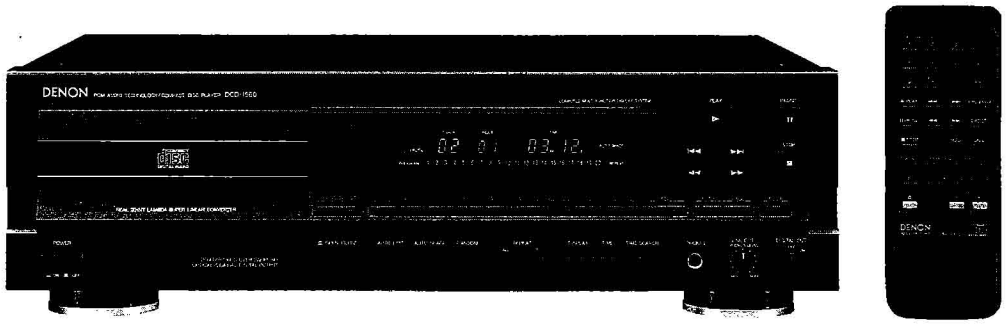
DENON

Hi-Fi Component

SERVICE MANUAL

STEREO CD PLAYER

MODEL DCD-1560



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NIPPON COLUMBIA CO., LTD.

IMPORTANT TO SAFETY

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

1. **Handle the power supply cord carefully**
   Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.
2. **Do not open the top cover**
   In order to prevent electric shock, do not open the top cover. If problems occur, contact your DENON DEALER.
3. **Do not place anything inside**
   Do not place metal objects or spill liquid inside the CD player. Electric shock or malfunction may result.

Please, record and retain the Model name and serial number of your set shown on the rating label.
Model No. DCD-1560 Serial No. _____

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

IMPORTANT (BRITISH MODEL ONLY)

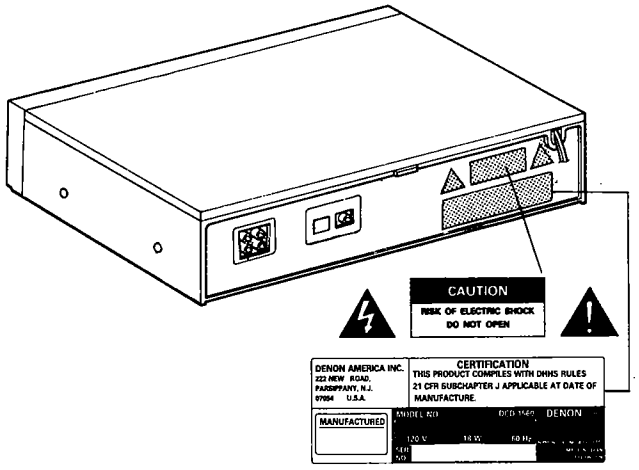
The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral Brown: Live

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

NOTE:
This CD player uses the semiconductor laser. To allow you to enjoy music at a stable operation, it is recommended to use this in a room of 5°C – 35°C.

LABELS (for U.S.A. model only)



CAUTION:
USE OF CONTROLS OR ADJUSTMENTS OR REFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

NOTE:
This unit may cause interference to radio and television reception if you do not operate it in strict accordance with this OPERATING INSTRUCTIONS.

This unit complies with Class B computing device rules in accordance with the specifications in Sub-part J or Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If the unit does cause interference to any radio or television reception, try to reduce it by one or more of the following means:
a) Turn the other unit to improve reception
b) Move this unit
c) Move this unit away from others
d) Plug this unit respectively into a different AC outlet

*** This is note in accordance with Section 15.838 of the FCC Rules.**

SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions – The safety and operating instructions should be retained for future reference.

3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.

4. Follow Instructions – All operating and use instructions should be followed.

5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.

6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

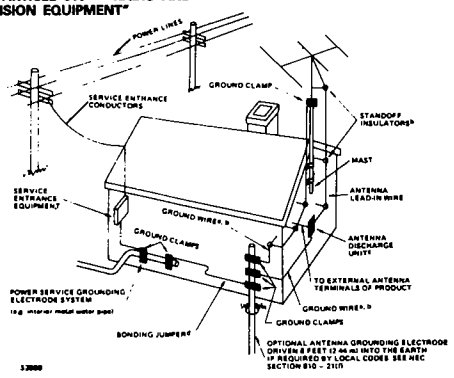
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Grounding or Polarization – The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.

FIGURE A
EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 – "RADIO AND TELEVISION EQUIPMENT"



12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. Protective Attachment Plug – The appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.

14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.

15. Power Lines – An outdoor antenna should be located away from power lines.

16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70–1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.

17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:

    A. The power-supply cord or the plug has been damaged; or

    B. Objects have fallen, or liquid has been spilled into the appliance; or

    C. The appliance has been exposed to rain; or

    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or

    E. The appliance has been dropped, or the enclosure damaged.

20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

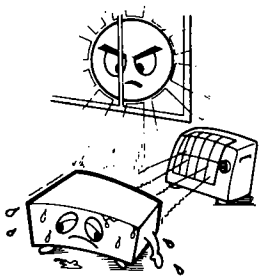
[a] Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copper-clad steel or bronze wire, or larger, as a ground wire.

[b] Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4–6 feet (1.22–1.83 m) apart.

[c] Mount antenna discharge unit as close as possible to where lead-in enters house.

[d] Use jumper wire not smaller than No. 6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

NOTE ON USE

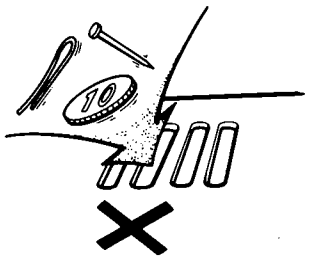


Be careful of high temperatures

- Do not place the set in a location where it will be exposed to direct sunlight or near a heating appliance.

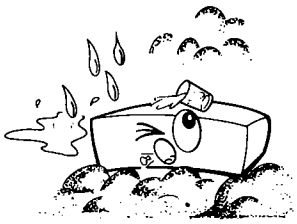
Caution on rack/cabinet installation

- Avoid installing the set in a closed-type rack.
- When installing in a rack or cabinet, provide a sufficiently large ventilation opening to promote heat radiation.



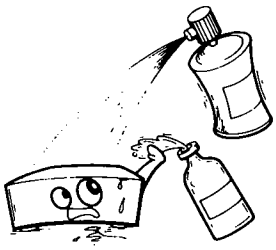
Do not allow foreign matter into the equipment

- Be especially careful of needles, hair pins, and coins getting into the set.



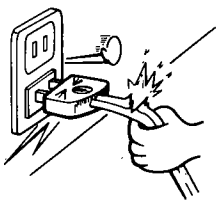
Caution on humidity, water, and dust

- Do not place the set in a location where there is high humidity or a lot of dust.
  Flower vases or other items containing water should not be placed on top of the set.



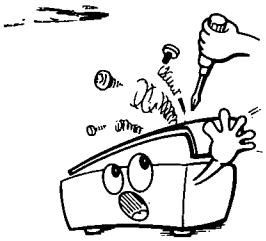
Care of the case

- Avoid the use of pesticides near the set as well as wiping the case with benzine, thinner or other solvents since they may cause a change in quality or color. Use a soft cloth when wiping away dirt and follow the instructions carefully when using chemically treated cloths.



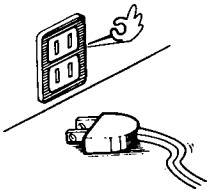
Care with the power cord

- When removing the plug from the receptacle, do not pull the power cord; be sure to hold the plug when removing it.



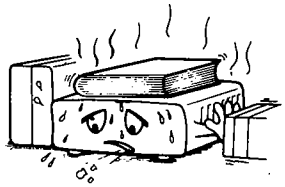
Do not open the case

- Opening the top cover or the bottom plate of the case and inserting your hand is dangerous. Do not open the case.
  If some trouble arises with the performance of the set, remove the power plug soon and contact the store where the set was purchased or a nearby dealer.



During your absence

- When not using the set for an extended period such as when taking a trip, be sure to disconnect the plug from the receptacle.



For sets with ventilation holes

Do not block the ventilation holes of the set

- Blocking of the ventilation holes will lead to damage of the set.
- The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set.

Thank you for purchasing this DENON Compact Disc Player. Please read the operating instructions thoroughly in order to acquaint yourself with the CD player and achieve maximum satisfaction from it.

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Please check to make sure the following items are included with the main unit in the carton:

(1) Operating Instructions 1
(2) Connection Cord 1
(3) Remote Control Unit RC-211 1
(4) Mini Screwdriver 1

FEATURES

The DCD-1560 is a CD player which uses DENON's unique ΛS.L.C. (Super Linear Converter) for eliminating loss of sound quality in the PCM playback section to offer playback of the same sounds as those in the studio or hall where the CD was recorded. In addition, the use of carefully selected parts makes this a high performance CD player reproducing the original sound field with rich musical expression.

(1) **Real 20-bit ΛS.L.C. (Super Linear Converter)**
The use of DENON's unique system for preventing zero cross distortion, the main factor in loss of sound quality in the PCM playback section, plus real 20-bit D/A converters with superior resolution, offers reproduction of the original sound field with rich musical expression.

(2) **High performance digital filter**
The independent real 20-bit D/A converters for the left and right channels and a high precision digital filter with 8 times oversampling bring out the best of the analog filter to produce crisp, clear sound.

(3) **Remote control unit with volume control**
In addition to such functions as play, pause, stop and direct search using number buttons, the remote control unit also includes + and – volume buttons for remote control of the volume. The remote control functions greatly add to the operability of the set.

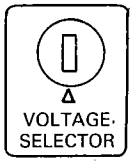
(4) **Optical digital output**
This jack makes it possible to output the data on the compact disc in its digital form to a digital processor or D/A unit for playback. The optical output eliminates noise interference and improves sound quality.

(5) **Great Resistance to Vibration**
BMC, a material with excellent vibration-absorbing properties, is used for the installation base of the laser pickup, and the double-layered top cover and bottom panels increase rigidity and improve resistance to vibration.

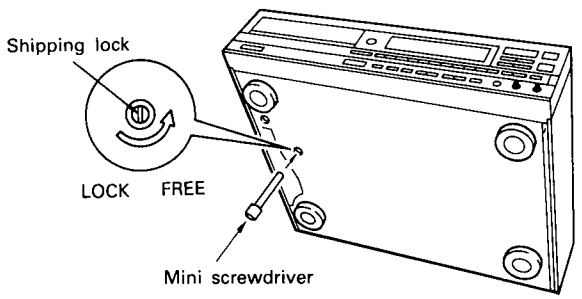
(6) **Simple Playback of 8 cm CD Singles**
8 cm CD signals can be played without using an adaptor.

• Line Voltage Selection (for multiple voltage model only)

* The desired voltage may be set with the VOLTAGE SELECTOR knob on the rear panel, using a screwdriver.
* Do not twist the VOLTAGE SELECTOR knob with excessive force as this may cause damage.
* If the VOLTAGE SELECTOR knob does not turn smoothly, please contact a qualified serviceman.



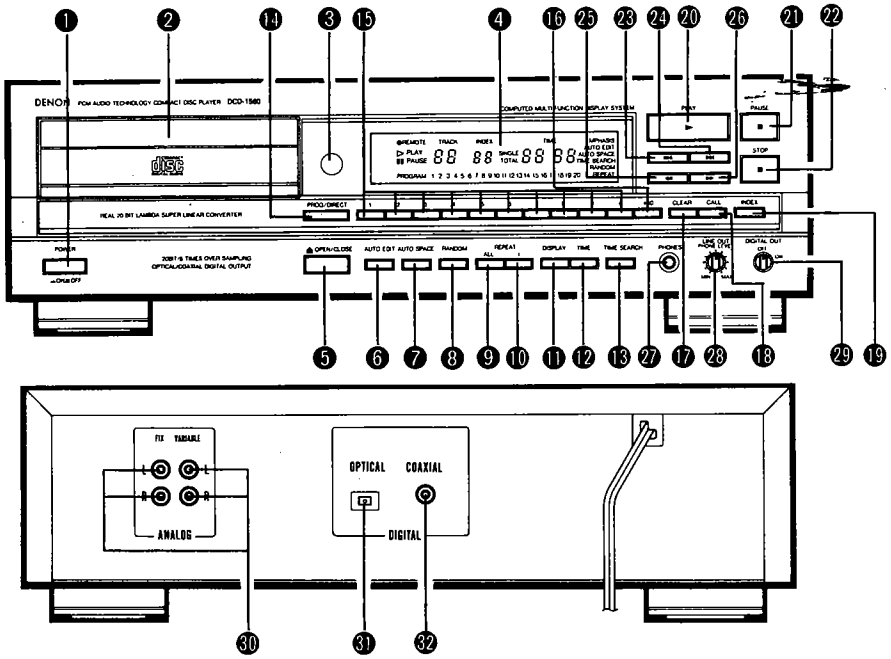
BEFORE USING — Be sure to release the shipping lock.



- **Shipping lock**
The shipping lock keeps the lasr pickup inside the player from moving during shipment.
- **When using the player**
Before turning the power on, be sure to turn the player up so that the back panel is facing down, insert the included mini screwdriver into the shipping lock, then turn counterclockwise (in the FREE direction) unit it stops. Be sure the lock is in this position when using the player.
- **Reshipping**
(1) Turn the power on, open the disc holder, check that no disc is loaded, then close the disc holder.
(2) Turn the power off, set the player up so that back panel is facing down, then use the mini screwdriver and turn the shipping lock clockwise (in the LOCK direction) until it stops.

CAUTION
Be sure to release the shipping lock on the bottom panel before turning the power on.
When locking or freeing the shipping lock, be sure to set the player with the front panel facing up, the back panel facing down. (Refer to the diagram)

NAMES AND FUNCTIONS OF PARTS



❶ Power Switch (POWER)

- When the power is turned on, "(00)" appears on the TRACK NO. display, and if no disc is loaded, "(00:00:00)" appears on the digital display and the calendar lights after a few seconds.
- If the power is turned on with a disc already loaded, the total number of tracks on the disc is displayed on the TRACK NO. display, the total time is displayed on the TIME display, the numbers on the music calendar light up to the number of tracks on the disc, and playback begins.

❷ Disc Holder

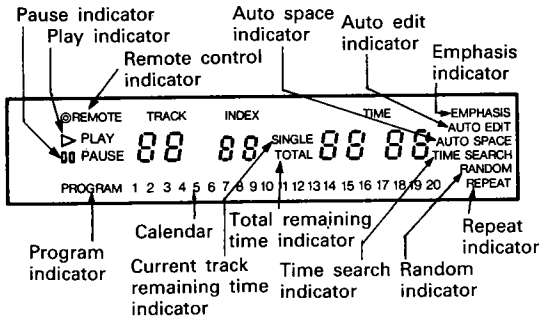
- Place the disc on the disc holder with the label facing up.
- Use the open/close button (⏏ OPEN/CLOSE) ❺ to open and close the disc holder.
- The disc holder may also be closed by pressing the play button (▶ PLAY) ⓴ or pause button (⏸ PAUSE) ㉑.

❸ Remote Control Sensor

- This sensor receives the infrared light transmitted from the wireless remote control unit.
- For remote control, point the supplied remote control unit RC-211 towards this sensor.
- When a signal is transmitted from the remote control unit, the remote control indicator in the display ❹ will light up briefly.

❹ Display

- The digital display is divided into sections, such as displays for track number, index, playback time and calendar, as shown below.



❺ Open/Close Button (⏏ OPEN/CLOSE)

- The disc holder is opened and closed by pressing this button.
- Press this button once to open the disc holder, and once again to close it.
- When the disc holder is closed with a disc loaded, the disc will rotate for a couple of seconds while the disc contents are read. The number of tracks and total playback time on the disc are then displayed on the digital display ❹.

❻ Auto Edit Button (AUTO EDIT)

- The tracks on the CD are automatically split into two halves, Side A and Side B, like an analog disc, with the division at the place between tracks which is closest to 1/2 the total playing time.
- When this button is pressed in the stop mode, the [AUTO EDIT] indicator lights, and the total playing time for the first half and the track numbers on the calendar are displayed for approximately 2 seconds. Next, the same is done for the second half, after which the unit is automatically set to the pause mode at the beginning of the first track. When the PLAY or PAUSE button is pressed, playback begins, and the unit is automatically set to the pause mode at the beginning of the first track of the second half which was previously displayed. When the PLAY or PAUSE button is pressed again, playback resumes, and the unit is automatically set to the stop mode at the end of the last track on the disc, at which time the [AUTO EDIT] indicator turns off.
- This function will only work for discs with a total of 20 tracks or less. Also, when this function is used the mode is automatically set to the program mode, so direct search is not possible.
- The [AUTO EDIT] indicator turns off and the auto edit function is cleared when the OPEN/CLOSE, STOP OR PROG/DIRECT button is pressed.
- The data for the total playing time recorded on the disc and the actual total playing time of the tracks differ, so there may be a difference between the time displayed in the stop mode (the total playing time) and the total of the times of the first and second halves in the auto edit mode (about 2 seconds).

❼ Auto Space Button (AUTO SPACE)

- Pressing this button will cause the [AUTO SPACE] indicator to light and a blank space of approximately 4 seconds is inserted between tracks during CD playback. Pressing the button once more, the [AUTO SPACE] indicator goes out and the Auto Space feature is cancelled.
- When one of the track search buttons (⏮ or ⏭) is pressed, the Auto Space function will not operate.
- The Auto Space function will work during normal playback as well as programmed playback.
- Although 4-second blanks are inserted between tracks, this additional time is not reflected by the indication on the time remaining display or time display when the Auto Edit function is engaged.

❽ Random Play Button (RANDOM)

- Press this button to repeat play the tracks on the disc in random order.

❾ Repeat All Tracks Button (ALL)

- Press this button to repeat playback of all tracks.

When this button is pressed, [REPEAT] lights on the display and all tracks on the disc or in a program will be repeatedly played back. Press this button once more to disengage the Repeat All function.

⑩ 1-track Repeat Button (1)
- Press this button to repeat one track only.
  When pressed during playback, the track currently playing is repeated.

⑪ Display Button (DISPLAY)
- Press this button to turn the indicators on the display window off.
- When pressed once, only the track number, index number, and time will remain lit.
- When pressed again, all indicators are turned off, and only the track number will be displayed except during playback.

⑫ Time Mode Button (TIME)
- This button is used to select the desired indication on the TIME display. The indication on this display will change each time the button is pressed.
  Normally, the elapsed playback time of the current track is displayed.
  Pressing the button once, [SINGLE] is displayed and the remaining time of the current track is displayed.
  Pressing once more, [TOTAL] is displayed, and total playing time of remaining tracks is displayed. However, when programmed play is in progress, the total remaining time of the program is displayed.
  Press the button once again to return to the normal display of the elapsed playback time of the current track.

⑬ Time Search Button (TIME SEARCH)
- Use this button to indicate the playback starting time or to specify a section between two points for playback. (Refer to Page 10)

⑭ Program/Direct Button (PROG/DIRECT)
- Press this button to switch between the program and direct modes when setting the program memory or using direct search. (Refer to Page 9)

⑮ Number Buttons (1, 2, 3, 4, 5, 6, 7, 8, 9 and 0)
- Use these buttons for the direct search and program memory functions.
  For direct search, press for example button [3] if you want to hear track number 3. For track number 12, press [+10] then [2].
  To program tracks, press the PROG/DIRECT button to set to the program mode.

⑯ +10 Button (+10)
- Press this button first when selecting track numbers over 10. Use it together with the number buttons. For example, to select track number ⑮, press [+10] then [5].
  For track number 33, press [+10] three times, then press [0].

⑰ Clear Button (CLEAR)
- Use this to correct programmed tracks. (Refer to Page 9)

⑱ Call Button (CALL)
- Press this button to check the tracks which have been programmed.

⑲ Index Button (INDEX)
- Press this button to start playback from an index within a track. Use the number buttons to specify the index number.

⑳ Play Button (▶ PLAY)
- Press this button to start playback of a disc.
- When this button is pressed, [▶ PLAY] is displayed, and the track number being played is displayed together with the elapsed playback time of the track.
- Tracks are shown on the calendar display. Once a track has been played, the corresponding track number goes out on the calendar display.

㉑ Pause Button (II PAUSE)
- Press this button to stop playback temporarily.
- If this button is pressed during playback, playback is stopped temporarily, the [▶ PLAY] indicator goes out and the [II PAUSE] indicator lights.
- Press this button or the play button (▶ PLAY) again to continue playback.

㉒ Stop Button (■ STOP)
- Press this button to stop playback.
  The disc will stop rotating, and the number of tracks and total playing time of the disc are displayed on the TRACK NO. and TIME displays, respectively.
- In case programmed playback is engaged when this button is pressed, the number of tracks and total playing time of the program are displayed.
- If this button is pressed in the stop mode, the program memory is cleared.

㉓ Automatic Search Reverse Button (I◀◀)
- Press this button to return the pickup to the beginning of the present track. Press again to return to other tracks.
- By pressing the button a number of times, the pickup will move back the corresponding number of tracks.

㉔ Automatic Search Forward Button (▶▶I)
- Press this button to move the pickup forward to the beginning of the next track. Press again to move ahead to other tracks.
- By pressing the button a number of times, the pickup will advance the corresponding number of tracks.

㉕ Manual Search Reverse Button (◀◀)
- Press this button during playback for fast reverse search. As long as the button is kept pressed, music signals are played back faster than normal.
- Pressing this button when the pause mode is engaged, you can quickly reverse the pickup to a desired position, three times faster compared to manual reverse search during playback. During this time, no sound is heard.

㉖ Manual Search Forward Button (▶▶)
- Press this button during playback for fast forward search. As long as the button is kept pressed, music signals are played back faster than normal.
- Pressing this button when the pause mode is engaged, you can quickly forward the pickup to a desired position, three times faster compared to manual forward search during playback. During this time, no sound is heard.

㉗ Headphones Jack (PHONES)
- For private listening, you can connect your headphones to this jack. Do not raise the volume level too much when listening through headphones. (Headphones are sold separately.)

㉘ Volume Control (LINE OUT/PHONES LEVEL)
- Use this to adjust the output level (VOLUME) of the headphones or line output (VARIABLE).
- The same operation is possible using the included remote control unit. (See Page 13)

㉙ Digital Output Switch (DIGITAL OUTPUT)
- Use this switch to turn the signals from the digital output jacksk (㉛ and ㉜ below) on and off.
- When off, no digital signals are output.

㉚ Output Terminal (FIX-VARIABLE)
- Connect these jacks to the input jacks on your amplifier. (Refer to Page 8 for details on the connections.)

㉛ Digital Output Jack (OPTICAL)
- Outputs digital optically.

㉜ Digital Output Jack (COAXIAL)
- This jack outputs digital data.
- We recommend using a 75-ohm pin cord (available in stores) for connections.

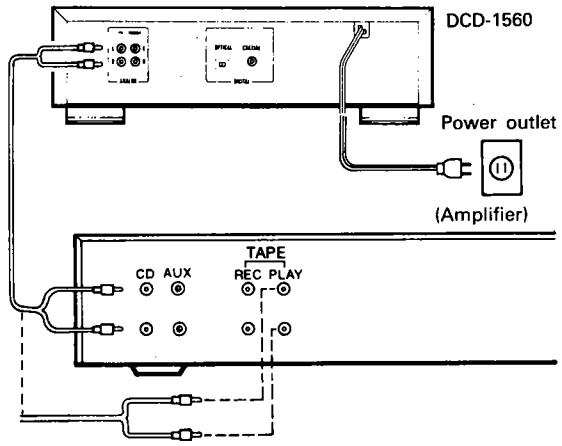
Continuous Operation
If the automatic search reverse button ㉓, the automatic search forward button ㉔, the CALL button ⑱, or the +10 button ⑯ are held in, the function of that button will be repeated.

CONNECTION

(1) Connecting the Output Terminal (FIX-VARIABLE)

Use the included pin cords to connect the left (L) and right (R) output terminal (FIX-VARIABLE) of the DCD-1560 to the CD, AUX, or TAPE PLAY left (L) and right (R) input jacks of the amplifier.

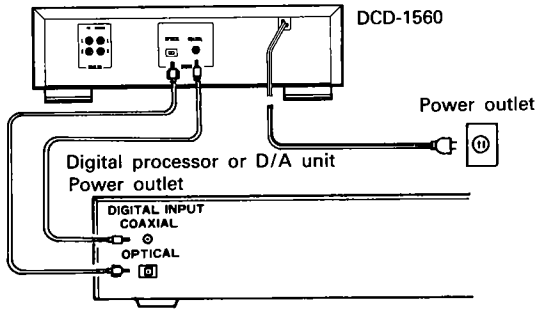
There are two types of output jacks, one of the variable type and one of the fixed type. Be sure to use the variable outputs if you want to be able to control the output level from the DCD-1560.



(2) Connecting the Digital Output Jack (COAXIAL/OPTICAL)

Use a 75-ohm pin cord to connect the digital output jack (COAXIAL) of the DCD-1560 to the digital input jack (COAXIAL) on a digital processor or D/A unit, available in stores.

In the same way, connect the digital output jack (OPTICAL) on the DCD-1560 with the optical input on a digital processor or D/A unit using an optical fiber cable.



Connection Precautions

- Before proceeding with connections or disconnections of cables and power cords, be sure to turn all system components off.
- Ensure that all cables are connected properly to the L (left) and R (right) jacks.
- Insert plugs fully into the terminals.
- Connect the output jacks to the amplifier CD, AUX or TAPE PLAY input jacks.

OPENING AND CLOSING THE DISC HOLDER AND LOADING A DISC

Opening and closing the disc holder (This operation only works while the power is on.)

1. Press the power switch (POWER) to turn on the power.
2. Press the open/close button (⏏ OPEN/CLOSE).

How to load a disc

- Make sure the disc holder is completely open.
- Hold the disc by the edges and place it on the disc tray. (Do not touch the signal surface, i.e., the glossy side.)
- When using 12 cm. diameter discs, make sure the outer edge matches the tray guide circumference (Fig. 1), and when using CD singles (8 cm. diameter) match the outer edge with the inner tray guide circumference. (Fig. 2)
- Press the open/close button (⏏ OPEN/CLOSE) to close the disc holder.
- When the disc holder is closed, the disc is read and after a few seconds the number of tracks and total playing time are displayed on the TRACK NO. and TIME displays, respectively.
- When the disc holder is open and a disc is loaded, you may also press the play (▶ PLAY) or pause (⏸ PAUSE) button to close the disc holder. (If the play button (▶ PLAY) is pressed, playback will start immediately upon the disc contents having been read.)

Fig. 1

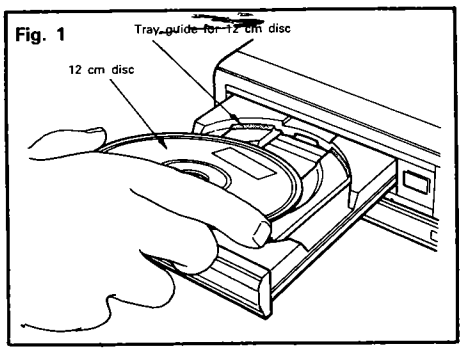
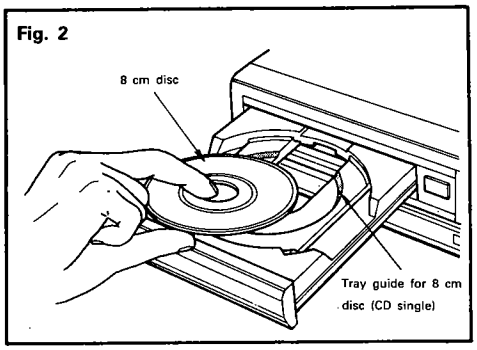


Fig. 2

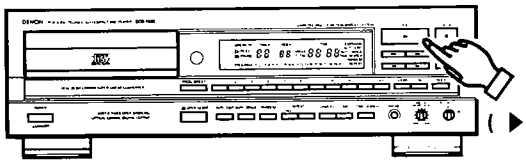


Caution:

- If your finger should get caught in the disc holder when it closes, press the open/close button (⏏ OPEN/CLOSE).
- Do not place any foreign objects on the disc tray, and do not place more than one disc on the tray at a time. Otherwise malfunction may occur.
- Do not push in the disc tray manually when the power is off as this may cause malfunction and damage the CD player.

NORMAL CD PLAYBACK

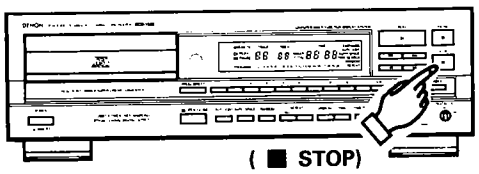
(1) Starting Playback



1 Press the power switch (POWER) to turn on the power.
2 Load the disc you want to play.
- When the disc holder is closed, the disc is read and the number of tracks and total playing time of the disc are displayed.

3 Press the play button (▶ PLAY).

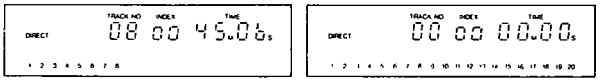
(2) Stopping Playback



1 Press the stop button (■ STOP).
- When all tracks have been played on a disc, playback will stop by itself.

Precautions:

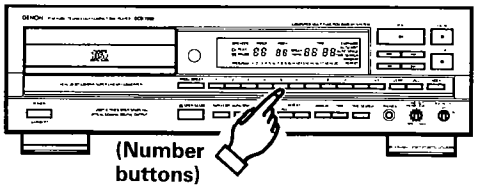
- If no disc has been loaded or the disc is loaded upside down, the track number, index, and time indicators will all display "0" and the entire calendar will light.
- When the information on the disc cannot be read correctly, for example due to dust or dirt on the disc, the indicators will read as shown below. Nothing will be shown on the TRACK NO. and TIME displays, and it may take quite a while to read the disc.
- When PLAY, PAUSE or NUMBER buttons are pushed just after turning on the unit with a disc inserted, the "TRACK INDEX TIME M S" display might not be indicated in the window. This is normal.
  In this case, push the STOP button to light-up the display and then, push your necessary function button.



Normal display　　Improper display

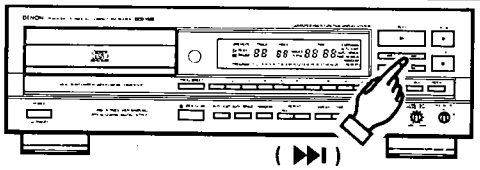
ADVANCED CD PLAYBACK

❶ Playing a Specific Track Direct Search ..... Number buttons



- Use the number buttons and the +10 button to input the number of the desired track.
  For example, to play track number 4, press [4], and to play track number 12, press [+10] and [2]. Playback will begin from that track.

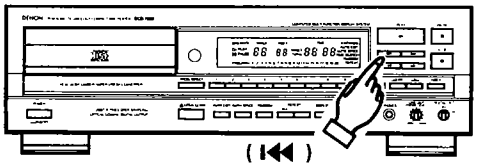
❷ Advancing to the next track during playback ..... Automatic Search



Press the Automatic search forward button (▶▶I) during playback.

- The pickup will advance to the beginning of the next track and playback will continue. Pressing the button several times will forward the pickup the corresponding number tracks.

❸ Returning to the beginning of the current track during playback ..... Automatic Search

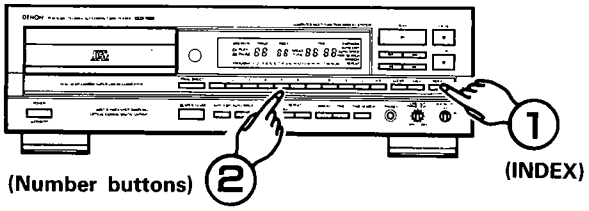


Press the Automatic search reverse button (I◀◀) during playback.

- The pickup will return to the beginning of the current track and playback will continue. Pressing the button several times will return the pickup the corresponding number tracks.

❹ Finding Sections Within a Track ..... Index Search

- With this function, you can find and play from the beginning of sections within the track marked by index numbers.



① "--" appears on the TRACK NO. display when the INDEX button is pressed.
② Input the track number using the number buttons.
Next, "--" appears on the INDEX display. Input the desired index number, and playback will start from that index number.
For example, to start from index 2 of track number 3, press INDEX, 3, then 2.

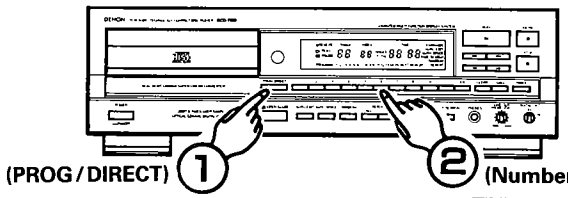
Indexes

- Indexes are numbers which are assigned to sections within a track. Check the disc's explanatory notes for the index numbers.
- If you input an index number not on the disc, playback will start from the last index number on the track.

❺ Playing Specific Tracks in a Specific Order ..... Programmed Play

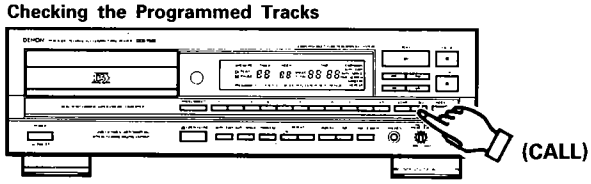
- With this function, you can choose any of the tracks on the disc and program them to play in any order.
- Programming is possible with the disc holder open.
- Up to 20 tracks can be programmed.
- The programmed tracks are shown on the calendar.

(1) Programming



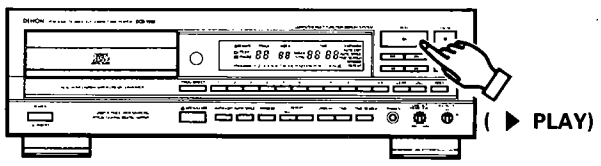
- Press the PROG/DIRECT button so that the [PROGRAM] indicator lights, then use the number buttons and the +10 button to program the tracks.
  For example, to program tracks 3, 12, and 7, press [PROG/DIRECT], [3], [+10], [2], and [7].
  The corresponding track number lights on the calendar each time a track is programmed, the track number is displayed on the TRACK NO. display, the number of tracks programmed is displayed on the INDEX display, and the total playing time of the programmed tracks is displayed on the TIME display. A few seconds after the last track has been programmed, the total number of tracks programmed is displayed on the TRACK NO. display and the total playing time of the programmed tracks is displayed on the TIME display.

(2) Checking the Programmed Tracks



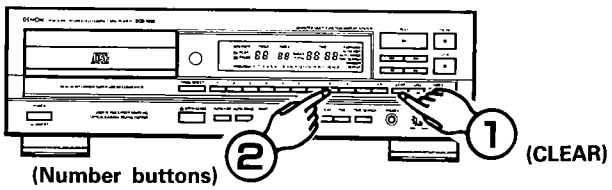
- Press the CALL button.
  The programmed tracks are displayed in order on the TRACK NO. display each time the CALL button is pressed.

(3) Playing the Programmed Tracks



- Press the (▶ PLAY) button to play the tracks in the programmed order.

(4) Correcting a Programmed Track



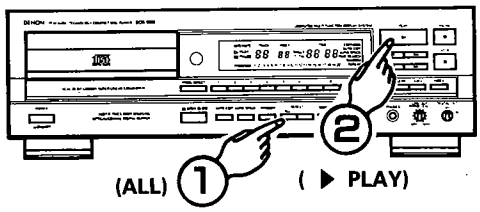
- To correct the last track which has been programmed, press the CLEAR button then program the track correctly.
- To clear a track in the middle of the program, press the CALL button to recall the track, then press CLEAR button, and finally press STOP button.

(5) Clearing the Program

- The entire program is cleared when the PROG/DIRECT button is pressed again. The program is also cleared when the (⏏ OPEN/CLOSE) button is pressed.
- If the PROG/DIRECT button is pressed during programmed play, the program is cleared and playback continues normally through to the last track on the disc.

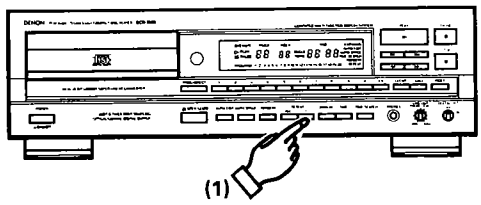
NOTES
- If programming is done in the play or pause mode, the track currently playing is programmed at the first position. Other tracks can be added to the program, but the number of programmed tracks and the playing time will not be displayed.
- Direct search is not possible during programmed play. If the number buttons are pressed, that track is added to the end of the program.
- Programming is possible with the disc holder open. Track numbers greater than the number of tracks recorded on the disc can be programmed, but will be automatically cleared before playback begins.
- The remaining time per track will only be displayed for track numbers 1 through 20.
- The total program time and remaining program time are not displayed if tracks greater than track number 20 are programmed.

❻ Repeating playback of all tracks ..... Repeat All

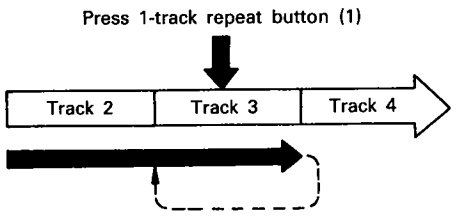


① Press the repeat all button (ALL).
② Press the play button (▶ PLAY).
- Pressing the repeat all tracks button (ALL), REPEAT is displayed.
- Steps ① and ② above may be reversed.
- To cancel repeat playback of all tracks, press the repeat all button (ALL) once more.
- Pressing the repeat all button (ALL) during programmed playback, playback of the tracks entered into the memory will be repeated.

❼ Repeating a Single Track ..... 1-track Repeat



- Press this button if you want to hear a track repeatedly.



- If the 1-track repeat button (1) is pressed during playback of a disc containing 20 tracks or less, the REPEAT indicator lights, the number of that track lights on the calendar and that track is played repeatedly.
* The 1-track repeat function is possible if there are more than 20 tracks on the disc, in which case only the REPEAT indicator lights and none of the numbers on the calendar light.
- If the 1-track repeat button (1) is pressed in the stop mode, track number 1 lights on the calendar, the REPEAT indicator lights, and it becomes possible to repeat only one track. To start, press the (▶ PLAY) button.
- To cancel 1-track repeat, press the 1-track repeat button (1) once again. Normal playback will resume, with the normal indicators lit.

❽ Playing a desired time or interval ..... Time Search

- With this function you can specify the starting time and/or ending time in seconds, allowing playback of a very specific section of a track.

In the Stop Mode
- Specifying the starting time

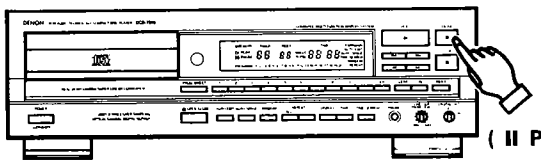
① Press the TIME SEARCH button. The TIME SEARCH indicator will flash on the display, and the TRACK display will read "--".
② Use the number buttons to set in order the track number and the time (minutes and seconds).
Example: Starting from 2 minutes 34 seconds into track 3
Press the following buttons in order: TIME SEARCH, 0, 3, 0, 2, 3, 4.
NOTE: If a track number or time not on the disc is set, the unit will return to the mode it was in before the first buttons were pressed.
③ Press the (▶ PLAY) button to begin playback from the specified time.
- Specifying the ending time

The ending time can be set before pressing the play button while the TIME SEARCH indicator is flashing using the following procedure:
④ Press the TIME SEARCH button. The TIME SEARCH indicator will stop flashing and the TRACK display will read "--"
⑤ Use the number buttons to set in order the track number and the time (minutes and seconds).
NOTE: It is not possible to set an ending time at a point before (or the same as) the starting time.
⑥ After specifying the ending time, press the (▶ PLAY) button to begin repeated playback between the two specified points. (A-B repeat by specifying the time)

In the Play Mode
① When the TIME SEARCH button is pressed, the current track number and time (minutes and seconds) are stored in the memory and the TIME SEARCH indicator begins flashing.
② When the (▶ PLAY) button is pressed, playback starts from the starting point stored in the memory.
To start playback over from the specified point, press the (▶ PLAY) button again.
③ If the TIME SEARCH button is pressed again, the ending time is stored in the memory, the TIME SEARCH indicator stops flashing, and the interval between the starting point and ending point is played repeatedly. (A-B repeat)
To cancel the time search function, press one of the following buttons:
(1) PROGRAM/DIRECT
(2) DIRECT (on remote control unit)
(3) OPEN/CLOSE

NOTE:
- If the search function is used after a track number and time (minutes and seconds) are specified with the disc holder open and no disc set, playback will start from the beginning of the first track on the disc.
- If a time over the time on the disc is specfied, playback will start from the beginning of the track following the specified track.

❾ Pausing playback at any point ..... Pause



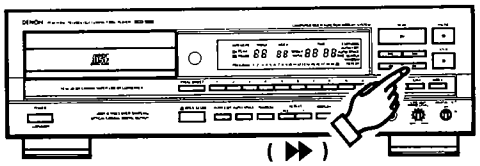
- Playback can be temporarily halted and then continued from the same point in the track.

1. Press the pause button (II PAUSE) during playback.
2. To continue playback, press the play button (▶ PLAY) or the pause button (II PAUSE) once more.

⑩ Audible quick search ..... Manual Search

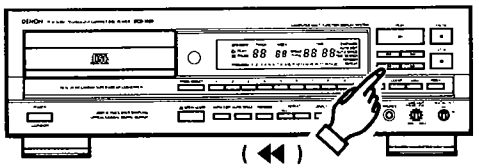
- Using this function, you can cue to a desired point within a track, either in the forward or reverse direction.
- Release the manual search button (◀◀ or ▶▶) when the desired point has been reached. Normal playback then continues.

(1) Manual Search Forward



1. Press the manual search forward button (▶▶) during playback. Playback of the track is sped up.
- As a reference, the current track number and elapsed playback time within the track are displayed.
- Manual search forward is approximately three times faster when engaged during the pause state compared to playback. In this case, no sound is heard however.
- If the manual search forward button (▶▶) is kept pressed after the end of the final track on the disc is reached, (JJ) is displayed and manual search stops. To return to another point, press the manual search reverse button (◀◀) until (JJ) disappears.

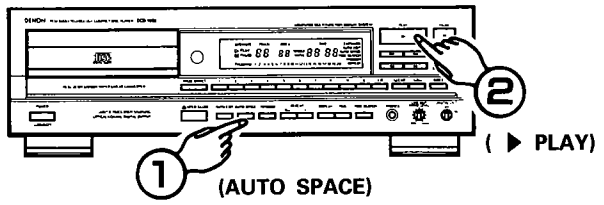
(2) Manual Search in Reverse



1. Press the manual search reverse button (◀◀) during playback. Reverse playback of the track is sped up.
- As a reference, the current track number and elapsed playback time within the track are displayed.
- Manual search in reverse is approximately three times faster when engaged during the pause state compared to playback. In this case, no sound is heard however.
- If the manual search reverse button (◀◀) is kept pressed after the beginning of the first track on the disc is reached, (CC) is displayed and manual search stops. To return to another point, press the manual search forward button (▶▶) until (CC) disappears.

⑪ Inserting blanks between tracks ..... Auto Space

- This is convenient feature that will insert 4-second blanks between tracks, which can be used when recording compact discs on tape.

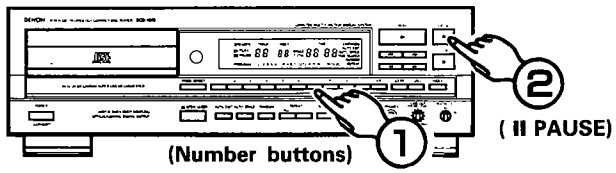


1. Pressing the auto space button (AUTO SPACE) will cause the AUTO SPACE indicator to light.
2. Press the play button (▶ PLAY) to start playback.
   When a track has been played to its end, a 4-second silence is made before the next track starts playing.
3. Press the auto space button (AUTO SPACE) again to cancel the function.

⑫ Searching and Pausing at the Beginning of the Track ..... Pause

(1) With Direct Search

- In this case, the set pauses at the beginning of the track found with the direct search operation.



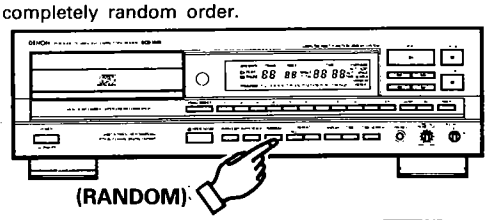
1. Press the number button(s) for the desired track.
2. Press the (II PAUSE) button.
- To start playback, press the (▶ PLAY) or (II PAUSE) button.

(2) With Program Search

- Press the (II PAUSE) button after the program search operation is completed. The set will pause at the beginning of the first programmed track.

⑬ Playing in Random Order ..... Random Play

- With this function, the tracks recorded on the disc can be played in a completely random order.



- When the RANDOM button is pressed, the RANDOM indicator lights and random play begins automatically.
- If the RANDOM button is pressed when tracks have been programmed, only the programmed tracks will be played, in random order.
- If the RANDOM button is pressed when the repeat function is set, the tracks will be played through once in random order, then played through again in a different order, etc.
- During random play, all of the tracks on the disc are displayed rapidly on the TRACK NO. display, and the track which will be played next cannot be known until playback starts.

NOTE:

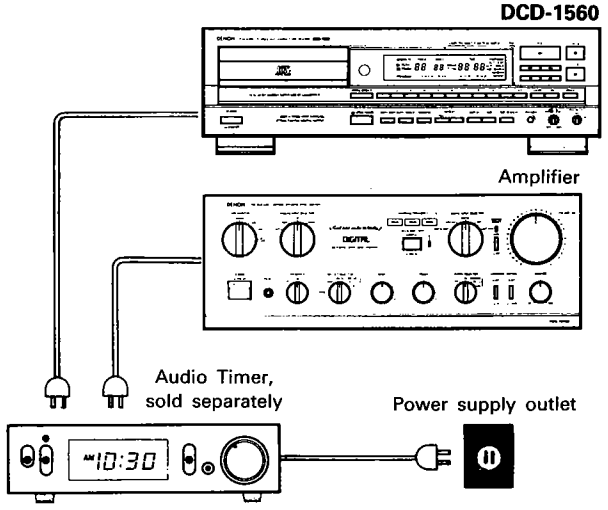
- The remaining time in the total mode cannot be displayed during random play.
- If the RANDOM button is pressed when in the auto edit mode, the auto edit mode is cleared.

TIMER-CONTROLLED PLAYBACK

■ **Operation**

1. Turn on the power of all system components.
2. Set the input selector on the amplifier to correspond to the inputs the CD player is connected to.
3. Make sure a disc has been loaded in the disc holder.
4. Check the time on the timer and then set the desired turn-on time.
5. Turn the audio timer ON.
   Power is turned off automatically in all components connected to the timer.
6. When the preset turn-on time is reached, power is turned on in the system components, and CD playback starts from the first track.

■ **Connection**



THE COMPACT DISC

1. Precautions on handling compact discs

- Do not allow fingerprints, oil or dust on the surface of the compact disc. If the signal surface is dirty, wipe it off with a soft, dry cloth. Wipe in circular motions from the center and out.
  Use of DENON's AMC-12 CD cleaner is recommended.
- Do not use water, benzene, thinner, record sprays, electrostatic proof chemicals, or silicone-treated cloth to clean discs.
- Always use care when handling discs to prevent damaging the surface, in particular when removing a disc from the case and returning it.
- Do not bend compact discs.
- Do not apply heat to compact discs.
- Do not enlarge the hole in the center of the disc.
- Do not write on the disc and do not attach any labels.
- Condensation will form on the disc surface if it is brought into a warm room from a cold area, such as outdoors during winter. Wait until the condensation disappears. Never dry discs with hair dryers, etc.

2. Precautions on storage

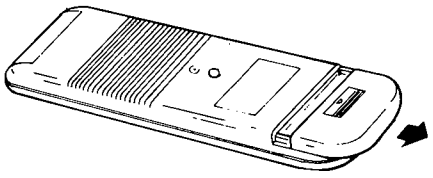
- After playing a disc, always return it to its case.
- Keep discs in the cases when they are not to be played. This will protect them from dust and dirt and prolong their service life.
- Do not store discs in the following places:
  1) Places exposed to direct sunlight for a considerable time.
  2) Places subject to accumulation of dust or high humidity.
  3) Places exposed to high temperatures, such as close to heater outlets.

PLAYBACK USING THE REMOTE CONTROL UNIT

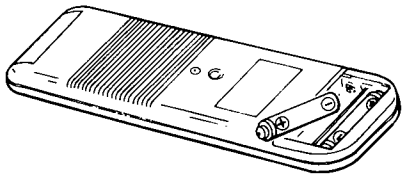
The accessory RC-211 remote control unit can be used to control the CD player from a convenient distance.

(1) Inserting the dry cell batteries

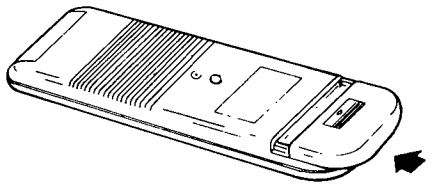
1. Remove the battery cover on the back of the remote control unit.



2. Insert two SUM-4 (standard size AAA) dry cell batteries with correct polarity as indicated inside the battery compartment.

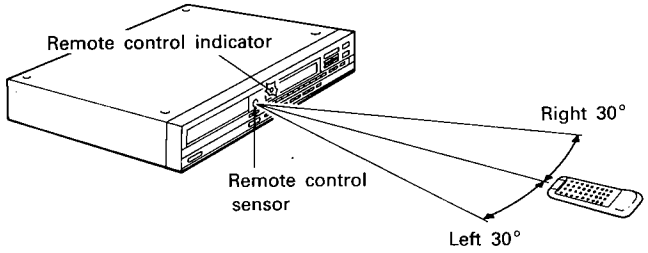


3. Replace the battery cover.



(2) Directions for Use

- Operate the remote control unit while pointing it towards the remote control sensor on the CD player (see below).



Notes on the Batteries

- The remote control unit uses standard size AAA dry cell batteries.
- The batteries will need to be replaced approximately once a year. Replacement may be necessary earlier depending on how much the remote control unit is used.
- If, in less than a year from the time new batteries were inserted, the remote control fails to operate the CD player from a near-by position, it is time to replace the batteries.
- Insert the batteries properly, following the polarity diagram inside the battery compartment, in other words make sure (+) and (–) terminals are properly aligned.
- Batteries are prone to damage and leakage.
  Therefore:
  - Do not combine new batteries with used ones.
  - Do not combine different types of batteries.
  - Do not jumper opposite poles of the batteries, expose them to heat, break them open nor expose of them in open fire.
- If the remote control unit is not to be used for a long period of time, remove the batteries from the unit.
- If the batteries have leaked, remove any traces of battery fluid from the battery compartment, wiping thoroughly with a dry cloth. Then insert new batteries.

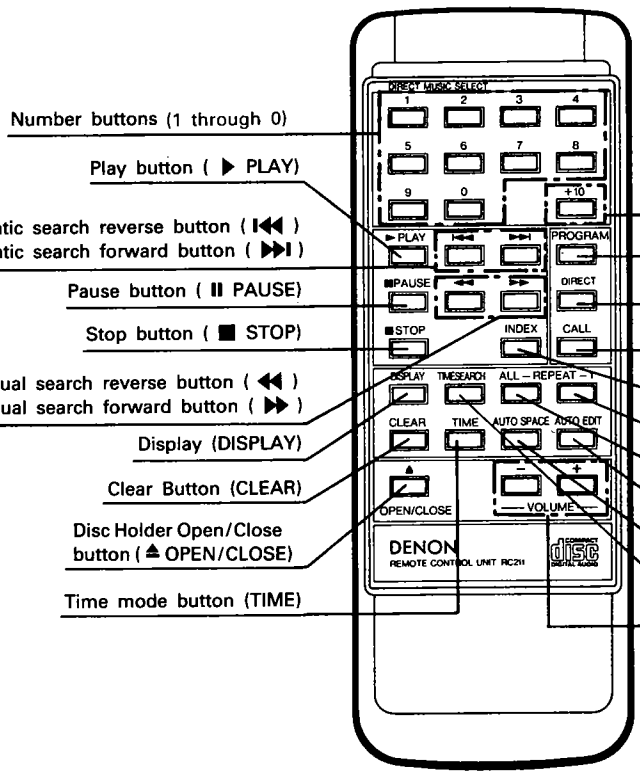
When a remote control signal is received, the remote control indicator on front of the CD player lights briefly.

- The remote control unit can be used at a distance up to 8 meters in a straight line from the CD player. This distance decreases if there are obstructions blocking the signal path or when the remote control unit is operated at an angle from the remote control sensor.
- The buttons on the remote control unit have identical functions with those on the CD player.
  However, the following functions cannot be remote controlled: Power ON/OFF. Turning th digital outputs on and off, and random playback.

Cautions on Use

- Do not press the operation buttons on the main unit and on the remote control unit simultaneously, as this will result in malfunction.
- The remote control unit may not operate properly if the remote control sensor is exposed to direct sunlight or strong artificial lighting, or if there is an object between the remote control unit and the remote control sensor.

REMOTE CONTROL UNIT RC-211


Number buttons (1 through 0)
Play button (▶ PLAY)
Automatic search reverse button (⏮)
Automatic search forward button (⏭)
Pause button (⏸ PAUSE)
Stop button (■ STOP)
Manual search reverse button (◀◀)
Manual search forward button (▶▶)
Display (DISPLAY)
Clear Button (CLEAR)
Disc Holder Open/Close button (⏏ OPEN/CLOSE)
Time mode button (TIME)
+10 button
Program button (PROGRAM)
Direct button (DIRECT)
Call button (CALL)
Index button (INDEX)
1-track repeat button (1)
All tracks repeat button (ALL)
Auto edit button (AUTO EDIT)
Auto space button (AUTO SPACE)
Time Search Button (TIME SEARCH)
Volume buttons (VOLUME)
DENON
REMOTE CONTROL UNIT RC211

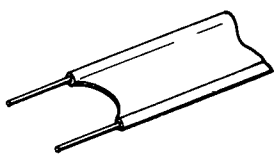
Setting to the Program Mode
- For program search, press the PROGRAM button then the number buttons (0 through 9 and +10).
- The remote control unit is normally set to the direct mode.

These control the output level of the VARIABLE output terminal.
The volume increases when the (+) button is pressed, decreases when the (–) button is pressed.

- **Direct Search**
  Normally, direct search is possible simply by pressing the desired number buttons.
- **Program Search (During playback, the track which is currently playing is programmed as the 1st track.)**
  Press the PROGRAM button, then press the number buttons.
  For example, to program tracks number 3, 11, and 5, press PROGRAM → 3 → +10 and 1 → 5.
  To cancel the program, press the DIRECT button.
- **Inputting the Track Numbers**
  For track numbers below 9, simply press the corresponding button. For track numbers of 11 and greater, press the +10 then the number buttons.
  For example, for track number 22 press +10 twice then 2.
- **Volume**
  The volume control on the unit will operate when the volume buttons are pressed. The volume can be checked by looking at the position of the control.

INSTALLATION PRECAUTIONS

The CD player uses a microcomputer for controlling internal electronic circuits. In the event that the player is used while a near-by tuner or TV is turned on, although unlikely, interference could occur either in the sound from the tuner or the picture of the TV. To avoid this, please take the following precautions.
- Keep the CD player as far away from the tuner or TV set as possible.
- Keep the power cable and connecting cable of the CD player separate from the antenna wires of the tuner and TV.
- Interference is particular likely to occur when an indoor antenna or a 300-ohm feeder cable is used. Thus, use of an outdoor antenna and 75-ohm coaxial cable is strongly recommended.


300-ohm feeder cable

75-ohm coaxial cable

TROUBLESHOOTING

If the CD player does not seem to be functioning properly, check the following:

Disc holder does not open or close.
- Is the power on?

When a disc is loaded, 00:00:00 is displayed.
- Is the disc loaded properly? ..... See page 8

When the play button (▶ PLAY) is pressed, playback does not start.
- Is the disc dirty or scratched? ..... See page 12

There is no sound, or it is distorted.
- Is the output cord properly connected to the amplifier? ..... See page 8
- Have the amplifier controls been set correctly?

A specific section of the disc will not play.
- Is the disc dirty or scratched? ..... See page 12

Programmed playback does not work.
- Have programming been properly done? ..... See pages 9 and 13

Incorrect operation when buttons on the remote control are pressed.
- Is the remote control unit being operated too far from the CD player? ..... See page 12
- Are there obstacles blocking the ray?
- Is the remote control sensor exposed to strong light?
- Are the batteries exhausted?

SPECIFICATIONS

AUDIO

No. of Channels:	2 channels
Frequency Response:	2 ~ 20,000 Hz
Dynamic Range:	100 dB
Signal-to-noise Ratio:	115 dB
Harmonic Distortion:	0.002% (1 kHz)
Separation:	106 dB (1 kHz)
Wow & Flutter:	Below measurable limit: (±0.001% W. peak)
Output Voltage:	2.0 V, VARIABLE 0 ~ 2.0 V
DISCS	Compact Disc format

GENERAL CHARACTERISTICS

Power Supply:	50/60 Hz, voltage is shown on rating label
Power Consumption:	18W
Dimensions:	434 (17.1 in) W × 135 (5.3 in) H × 350 (13.8 in) D mm
Weight:	10.7 kg

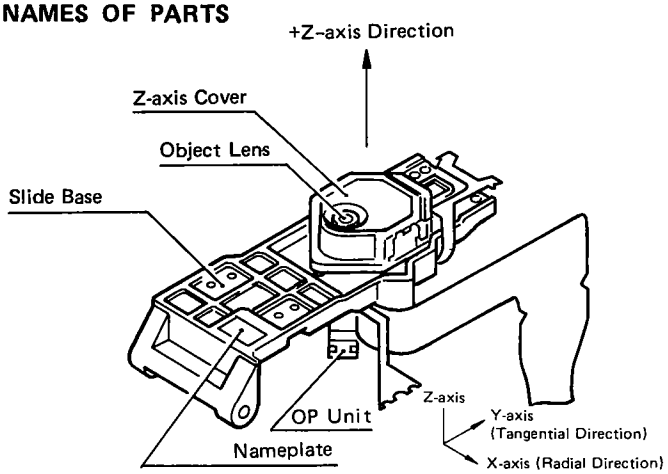
FUNCTIONS AND DISPLAY

Functions:	Direct selection, automatic search, programmed playback, repeat playback, manual search, auto space, time mode, auto edit, emphasis feature
Display:	Track number, time, music calendar, and engaged modes
Others:	Headphones jack
REMOTE CONTROL UNIT:	RC-211
Remote Control System:	Infrared pulse system
Power Supply:	3 V DC; two SUM-4 (standard size AAA) dry cell batteries
External Dimensions:	60 (2.4 in) W × 165 (6.5 in) H × 17 (0.7 in) D mm
Weight:	95 g (including batteries)
SUPPLIED ACCESSORIES	Pin-plug connection cord, mini screwdriver.

* Design and specifications are subject to change without notice in the course of product improvement.

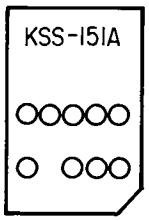
NOTE FOR HANDLING OF LASER PICK-UP

• NAMES OF PARTS



If a voltage value across Pin ⑥ of TP102 (+5V) and Pin ② (iop) of Unit (2U-1980/1996) is V1, the value of laser diode current "iop 1" can be found a formula iop $1=\frac{V1}{22}$.

• NAME PLATE



Year (last figure)

Day Month | Quality Control No.

Lot No. ○○ ○ ○ ○

Note: Month indication X, Y, Z signify 10, 11,12.

Iop ○ ○ ○ ○

Control Letter by the Plant | 1 Figure 1st Decimal Place

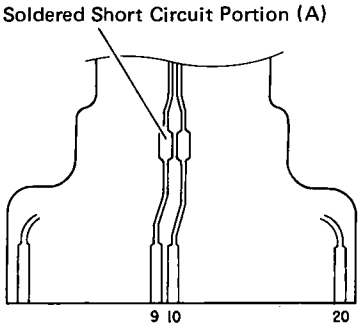
10 Figures

Indication unit is mA omitted a decimal point.

• CONNECTION DIAGRAM OF CONECTOR (1)

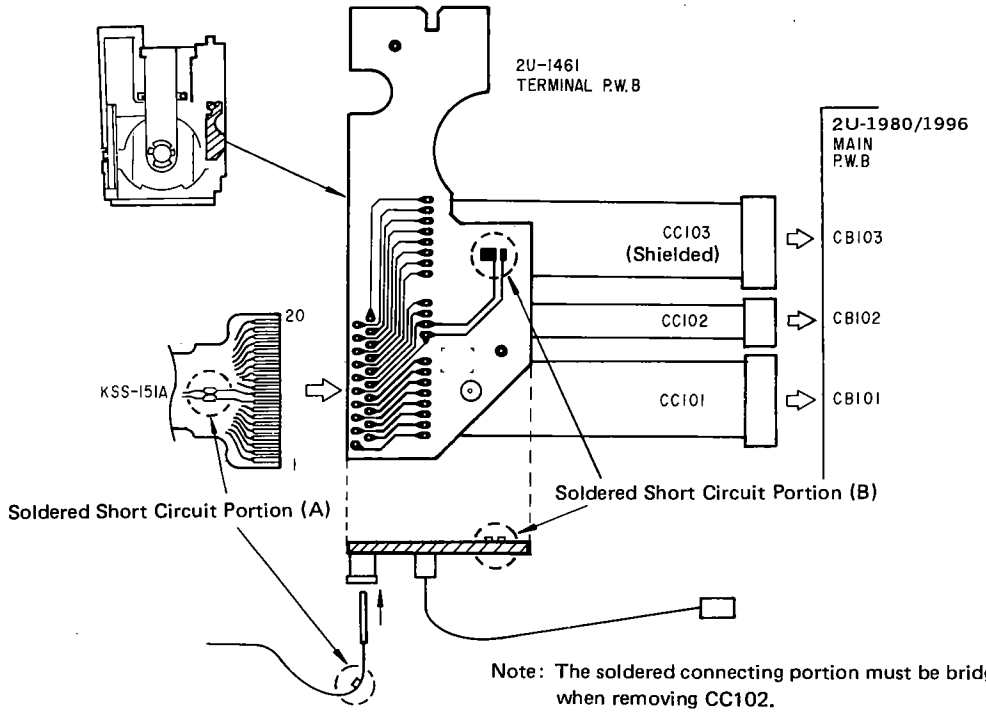
KSS 151A Accessory flexible wire terminals.

No.	Description	No.	Description
1	Linear motor	11	PD
2	Linear motor	12	VR
3	2-axis −F	13	GND
4	−T	14	PD D
5	+T	15	C
6	+F	16	A
7	Senser	17	B
8	Senser	18	K
9	LD GND	19	F
10	LD	20	E



• CONNECTION DIAGRAM OF CONECTOR (2)

KSS-151A → TERMINAL P.W.B → MAIN P.W.B



Note: The soldered connecting portion must be bridged when removing CC102.

Cautions for Handling the Laser Pick-up

The laser pick-up KSS-151A is assembled and precisely adjusted using a sophisticated manufacturing process in our plant. Do not disassemble or attempt to readjust it. Please keep the following instructions carefully in handling pick-up.

1. General Care

(1) Storage
Do not store the pick-up in dusty, high-temperatured or high-humidity environments.

(2) Please take care for preventing from shock by falling down or careless handling.

2. Laser Diode (LD)

(1) Protect your eyes
The laser beam may damage the human eye, since the intensity of the focused spot may reach 1.3×10^4 W/cm^2 even if the intensity at the object lens is 400 μW maximum. As the light beam spreads after focused through the objective lens, it does not effect you in the place as far as more than 30 cms. However, do not look at the laser light beam either through the objective lens directly nor another lens or a mirror.

(2) Poison of As
Since the LD chip contains As (Arsenic), as GaAs + GaAlAs, as known as the poison, although the poison is relatively weak, in comparing with others, e.g. As_2O_3, $AsCl_3$ etc., and the amount is small, avoid putting the chip in acid or an alkali solution, heating it over 200°C or putting it into your mouth. . . . .

(3) Avoid surge current or electrostatic discharge
The LD may be damaged or deteriorated by it's own strong light if a large current is supplied to it, even if only a short pulse.
Make sure that there is no surge current in the LD driving circuit by switches or else. Be careful to handle pick-up as it may be damaged in a moment by human electrostaic discharge. The pins of the LD are short-circuited by solder for protection during shipment (Soldered short circuit portion (A)].
For safety handling of an LD, grounding the human body, measuring equipments and jig is strongly recommended. And still it is further desirable to make use of mat on the platform and floor for handling the LD.
To open the short circuit, remove the soldering quickly with a soldering iron whose metal part is grounded. The temperature of the soldering iron should be less than 320°C (30W).

3. X-axis Actuator

(1) The performance of the actuator may be effected if magnetic material is located nearby, since the actuator has a strong magnetic circuit. Do not permit dust to enter through the clearance of the cover.

(2) **Cleaning the lens**
It may change the specifications when dust or dirt is stuck on the object lens.
For cleaning, use a dry lens cleaning paper applying no excessive pressure to the lens. If it is difficult to remove it, moisten the paper with a little amount of water. At this time never drip water other than the lens portion.

4. The Metal Bearing

The metal bearing of Cu-compound sintered alloy is impregnated with oil. However, supply oil with the specified oil FROIL 947P(5290054007), at the pik-up replacing time. You do not normally need lublicate the bushing in initializing time nor supplying oil in running time.

5. Handling

Please handle the laser pick-up with holding by optical base.
When either a part of human body or some other things may happen to touch directly with the circuit part of either the LD or PD PCB, it may cause deterioration, take careful attention in handling this base.

6. Deterioration of Laser Pick-up

When difficulty occurs either in focus or tracking adjustment nor able to adjust the focus or tracking, it seems that the laser pick-up is deteriorated. In these cases, check a value of laser diode current and give a decision for deterioration.

7. Fundamental Deterioration Decision of Laser Pick-up

(1) If a voltage value across Pin ⑥ of TP102 (+5V) and Pin ② (iop) of Unit (2U-1980/1996) is V1, the value of laser diode current "iop 1" can be found a formula iop $1=\frac{V1}{22}$.

(2) If a "iop" exceeds ±10% compared with the IOP indication on the laser pick-up mameplate, there is a fair chance for deterioration when it is checked under a circumambient temperature 23°C.

(3) When the circumambient temperature changes ±10°C, "iop 1" will change ±5%. The "iop 1" will also be changed the passage of time.

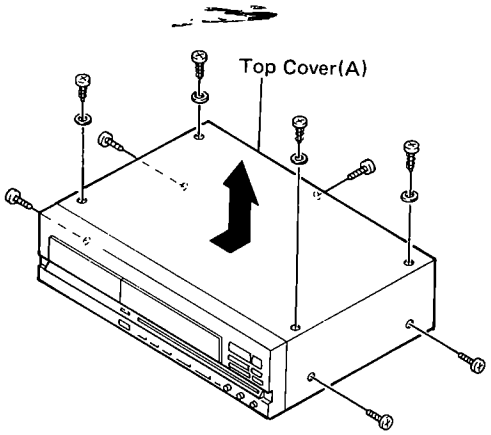
(4) In case of the above conditions taking into consideration and performed the adjustment in proper way, if the HF level across pin ① and across (HF) GND of TP102 in 2U-1980/1996 becomes 0.6V or less values; or a gitter occurs great, the laser pick-up is may be deteriorated.

DISASSEMBLY

1. Top Cover (A)

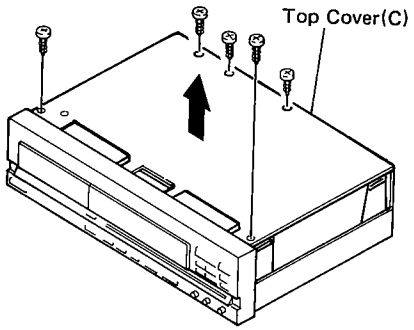
Remove 4 screws from top cover and 4 screws from both sides.

Then, remove top cover torward the arrow direction while expanding the both side cover outside.



2. Top Cover (C)

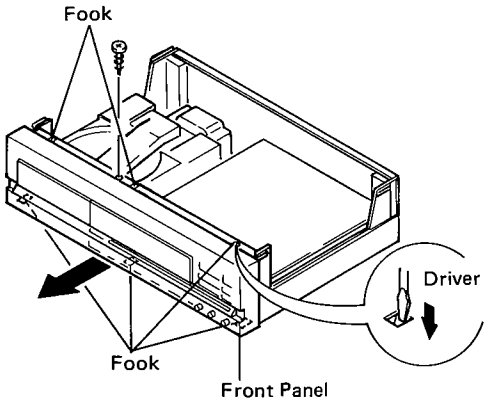
Remove 4 screws, and then remove top cover toward the arrow direction.



3. Front Panel

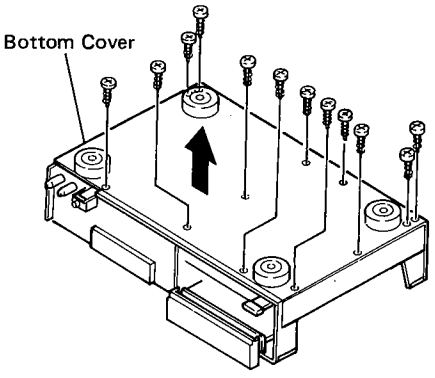
Firstly, remove one screw on front panel.

Secondly, remove hook by inserting and screwing of -screwdriver on 3 parts of top and 3 parts of bottom, and then remove front panel toward the arrow direction. (At this time do not push the hook excessively strong as this may invite the breakage of hook.)



4. Bottom Cover

Remove 12 screws from bottom cover, and then remove bottom cover toward the arrow direction.



FG-611 LASER PICK-UP MECHANISM

- **How to move the Looder Frame manually**
  Manually push the lock arm (A) to the rightward and pull the Loader frontward, then the Loader can be open/close manually.

- **Whole body of the Laser Pick-up Mechanism FG-611**
  Removing 6 screw (B) makes possible to detach whole body of the Laser Pick-up Mechanism from the Chassis.

- **Loader Frame**
  Remove whole body of the Laser Pick-up Mechanism FG-611, pull the Loader Frame (28) frontward, then after unfasten screw C lift the Loader Rail (34) upward and pull it out backward, then the Loader Frame can be taken out (Fig. 1)

- **Housing Assembly**
  Remove 4 screw (A)1 ~ (A)3, and detach the Assembly composed of Laser Pick-up Magnet, Yoke, Turntable, and Spindle Motor.
  By removing of screw (A), the parts for mechanism floating can be taken down as illustration shows. (Fig. 2-2)
  When reassembling, remind that the Washer and H-damper are commonly used, but the Coil Spring and Collar are provided two types for maintaining equilbrium.

(A)1	4630515 000 COIL SPRING (D)	433 0484 004 COLLAR (A)
(A)2	463 0515 000 COIL SPRING (D)	433 0485 003 COLLAR (B)
(A)3	463 0514 001 COIL SPRING (C)	433 0485 003 COLLAR (B)

- Coil spring (D) (used 3 each) is marked in red.
- Coil spring (C) (used 3 each) is not marked.
- Collar (B) (used 2 each) is made of brass (yellow).
- Collar (A) (used 2 each) is made of brass plated with nickel (white).

- **Laser Pick-up KSS-151A**

(1) Detach the Housing Assembly, then remove 6 screws (B). (Fig. 2-1)
(2) Remove 2 screws (A), unsolder 2 portions (B), and detach the Speed Detection Coil. (Fig. 3)
(3) Next, remove 2 screws (C), unsolder 2 portions (D), and detach the Drive Coil. And pull out the Shaft at portion (E), then the Lase Pick-up can be taken out. (Fig. 3)

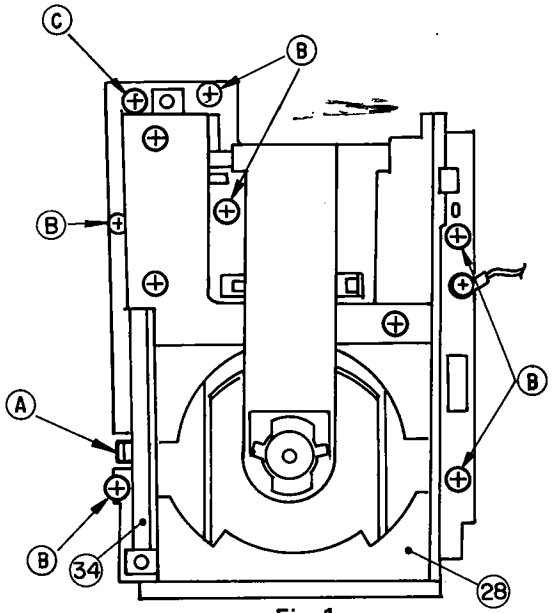


Fig. 1

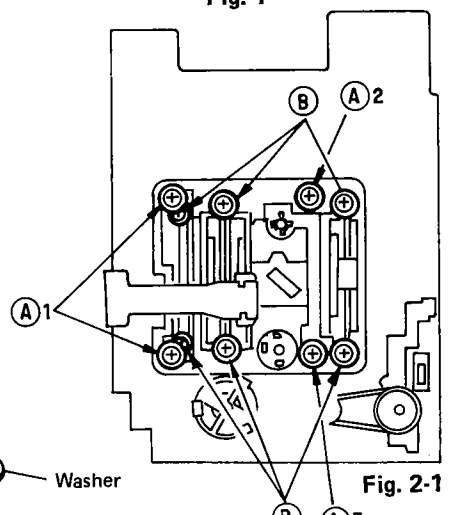


Fig. 2-1

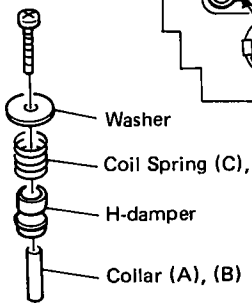


Fig. 2-2

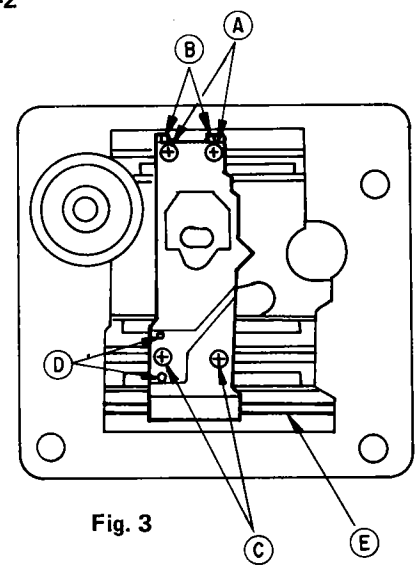


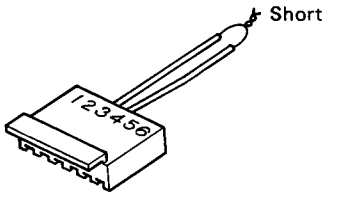
Fig. 3

ADJUSTMENT

Microcomputer built in the unit, comprises service program to facilitate servo adjustment by pushing operation button.

1. Start service program

(1) Turn power switch OFF.
(2) Shortcircuit pins ③, ④ of connector (TP102) on P.W.B. (Main Unit)
(Caution) Do not touch other pins.
(3) Turn power switch ON.
(Service program starts, and displays track number 01)



Short-Circuit Connector Jig for TP102

(Caution)
- When service program started normal operation of buttons will be defeated.

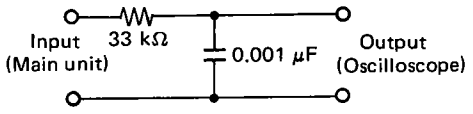
2. Service program function

Button	Function	Description
▲ OPEN/CLOSE	Opens or closes the disc holder.	• Opens or closes only when disc is stopped. • Operate other keys after open or close .
■ STOP	Stops system function.	• Displays track number 01 . • Push when adjustment completed, or do it again.
▶ PLAY	Starts focus servo and disc turns.	• Push when adjust tracking offset. • When completed, displays track number 02 .
❙❙ PAUSE	Starts focus servo, tracking servo, slide servo, spindle servo.	• When PLAY button is pushed, starts tracking servo and slide servo. • When completed, track number 03 .
Other button	No normal operation.	• Do not operate buttons other than above. • If misoperated, immediately turn power switch OFF.

(Caution)
- Do not use remote control during service program mode.

3. Adjustment

(1) Prior to start adjustment
Before adjusting laser P.U. and spindle motor, be sure adjust turntable height at the time of turntable assembly.
(2) Necessary equipment for adjustment
1 Dual trace oscilloscope
2 Reference disk (CA-1094) 富田靖子
3 Oscillator (10 Hz ~ 10 kHz, 0 ~ 3 Vp-p)
4 Frequency counter (readable more than 5 MHz)
5 Filter for measurement



(Filter for measurement)

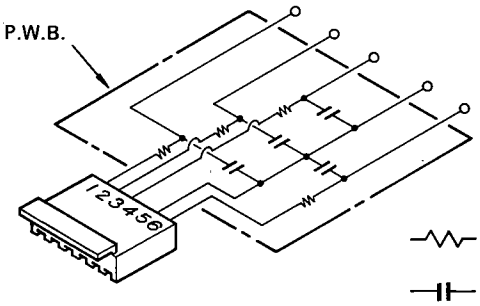
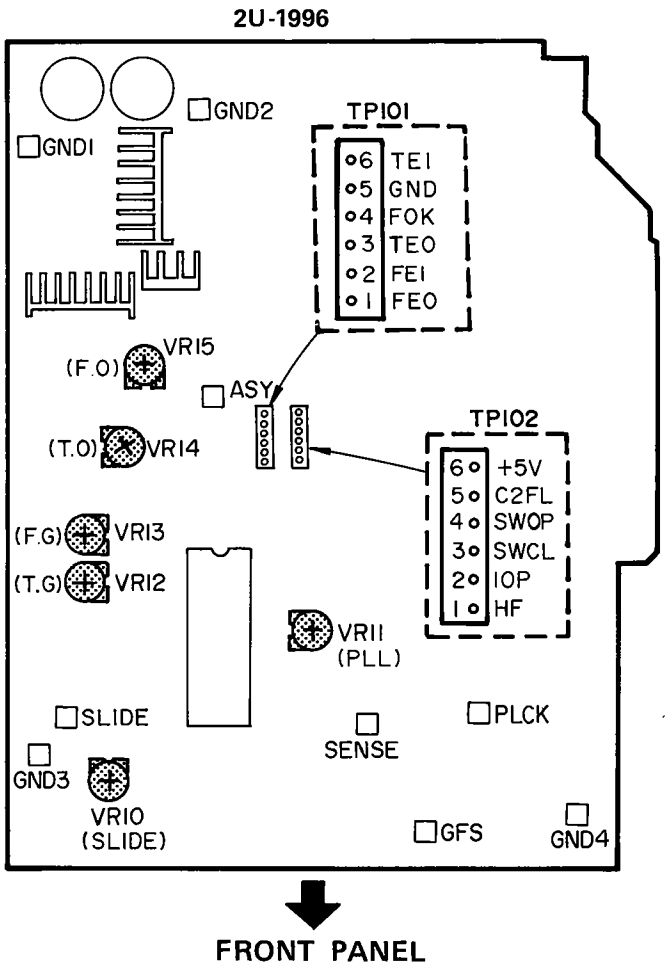


Figure Jig Combination

(3) Location

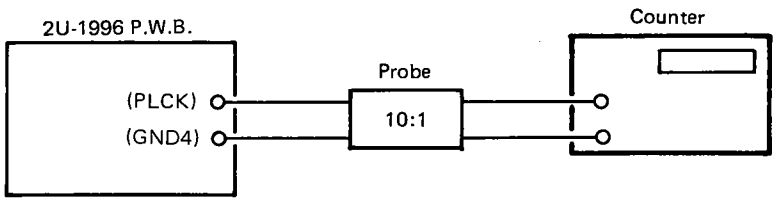


(4) Preset

1.	Start service program.	
2.	Preset VR10 ~15 as per left figure.	VR15 (F·O) 12 O'clock VR14 (T·O) 2 O'clock VR13 (F·G) 9 O'clock VR12 (T·G) 9 O'clock VR11 (PLL) 3 O'clock VR10 (SLIDE) 6 O'clock
3.	Step.	1. PLL 2. Slide offset 3. Tracking offset 4. Focus gain 5. Focus offset 6. Tracking gain 7. Tracking offset recheck

4. PLL Adjust

Connection

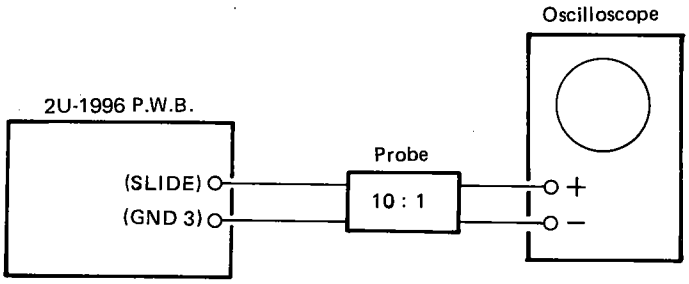


- Ground Test point [ASY] to GND1.

Adjust	Check	Step
(Volume)	(Counter)	• Turn PLL volume VR11 so that frequency counter reads 4.32 MHz.
VR11	4.32 MHz ± 10 kHz	

5. Slide offset

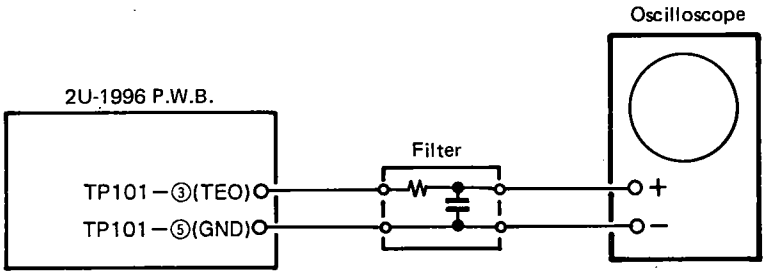
Connection

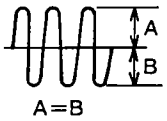


Osilloscope		Adjust	Check	Step
(DC range)		(Volume)	(Oscilloscope)	
V	H	VR10	0 V ±0.1 V	1. Short the + and - terminal of the oscilloscope. 2. Adjust the VR10 [SLIDE] to 0 V ±0.1 V.
0.1 V/div	1 ~2 mS/div			

6. Tracking offset

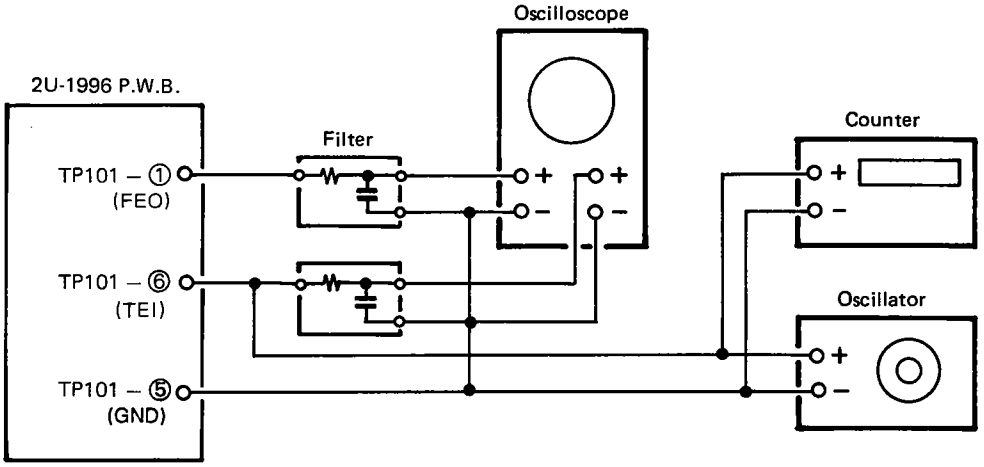
Connection



Oscilloscope (DC range)		Adjust	Check	Step
V	H	(Volume)	(Oscilloscope)	1. Push ▲ OPEN/CLOSE and load disc holder reference disk. 2. Push ▲ OPEN/CLOSE and close disc holder. 3. Push ▶ PLAY to turn disc. 4. Short (+) (-) of oscilloscope and check the base line. 5. Adjust VR14 [T-OFFSET] to equalizer upper and lower amplitude of the waveform.
0.1V/div	1~2 ms/div	VR14	 A=B	

7. Focus gain

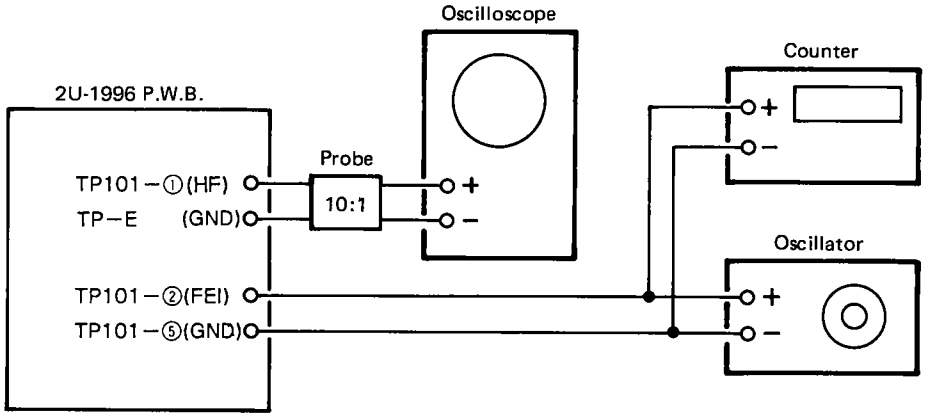
Connection

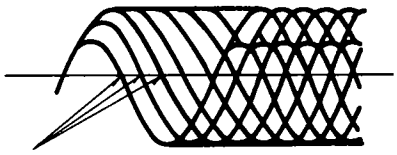
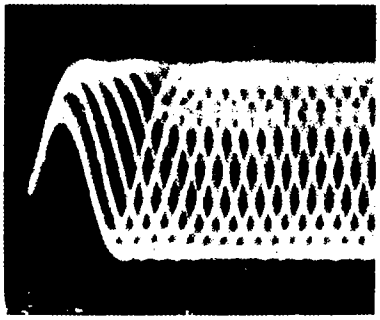


Oscillator	Counter	Oscilloscope		Adjust	Check	Step
		V	H	(Volume)	(Oscilloscope)	
580 Hz 1 Vp-p (±0.1 V)	580 Hz	• DC range • X-Y mode		VR13	Y axis X axis Phase 90° Waveform not right X axis Y axis X axis Y axis	1. Push [II PAUSE]. 2. Set oscillator to 580 Hz/1 Vp-p. 3. Switch oscilloscope input to X-Y mode. 4. Adjust VR13 [F-GAIN] to symmetrize Lissajous figures to X and Y axes. • If the tracking gain is not properly adjusted, the waveform becomes as per the left figure.

8. Focus offset

Connection



Oscillator	Counter	Oscilloscope		Adjust	Check
		V	H	(Volume)	(Oscilloscope)
580 Hz 1 Vp-p (±0.1 V)	580 Hz	50 mV/div or 20 mV/div	0.2 μs/div or 0.5 μs/div	VR15	 Adjust to minimize pattern jitter.  Pattern
		• Set input mode to ALTERNATE or CHOPPER.			

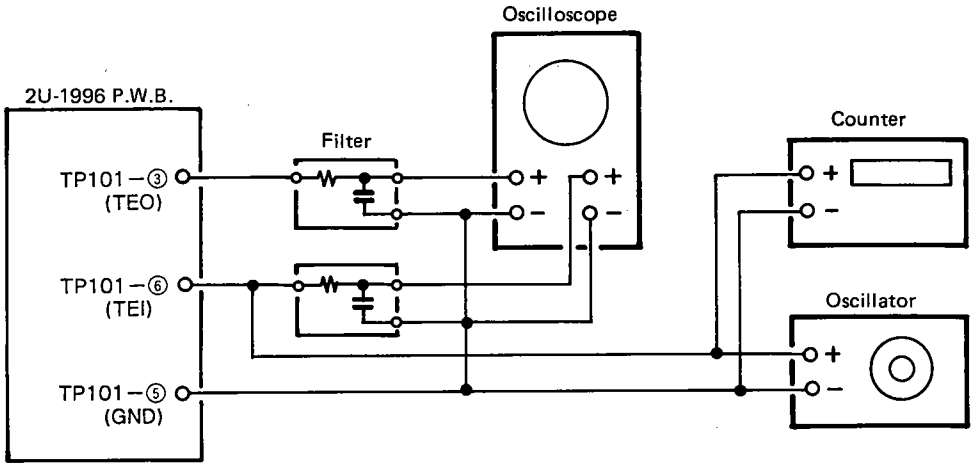
Step

1. Push [II PAUSE].
2. Set oscillator to 580 Hz, 1 Vp-p (±0.5 V).
3. VR15 [F-OFFSET] to minimize pattern jitter.

- If the focus offset is not properly adjust, causing the increase of jitter amount thus producing the intermittent sound may occur.

9. Tracking gain

Connection



• Caution: Connect oscillator after [II PAUSE] pushed and servo function started.

Oscillator	Counter	Oscilloscope V	Oscilloscope H	Adjust	Check	Step
• 1.8 kHz (±120 Hz) • 3 Vp-p (±0.1V)	1.8 kHz (±120 Hz)	• DC range • X-Y mode		VR12	(Oscilloscope) Y axis / X axis Phase 90° Waveform not right X axis / Y axis X axis / Y axis	1. Push [II PAUSE]. 2. Connect oscillator. 3. Set oscillator to 1.8 kHz/3 Vp-p. 4. Switch oscilloscope input to X-Y mode. 5. Adjust VR12 [T-GAIN] to symmetrize Lisaajous figures to X-Y axes. • If the focus gain is not properly adjusted, the waveform becomes as per the left figure.

10. Tracking offset adjustment check

(1) Adjust tracking offset again.
(2) Push [■STOP] and stop disc.
(3) Push [▶PLAY] and check disc turns.
Note: If disk does not turn, push [▶PLAY] again and check track number 02 is displayed.
(4) Check oscilloscope waveform upper and lower amplitued are same to base line. (Difference of vertical amplitude should be within the range of 5 % to the base line.)
(5) In case the height of waveform differs adjust the with the VR14.
(6) Push [■STOP] and stop disc.
(7) Push [▲OPEN/CLOSE] and remove the reference disc.

HEAT RUN MODE FUNCTION

Heat Run Mode

1) To activate

While hold pushing 8,9,0 and +10 keys of the 10-KEY simultaneously, turn the unit power on. The remote control sensor indicator will light to show that the unit is shifted in Heat Run mode.

Be sure to load the disc previously.

Press the disc holder open/close button (▲OPEN/CLOSE) to cancel Heat Run mode.

Never push the PAUSE button.

2) Operation

During the Heat Run mode to shift the unit in Play mode makes the unit replays from the first music after opens the loader once and re-closes it when finish playing the last track (comes into lead out).

Hereafter, operates open/close of loader, servo on, reading of TOC, and playing repeatedly. For a disc with more than 30 tracks, repeat playing the two tracks; the first and the last ones.

3) Error Message

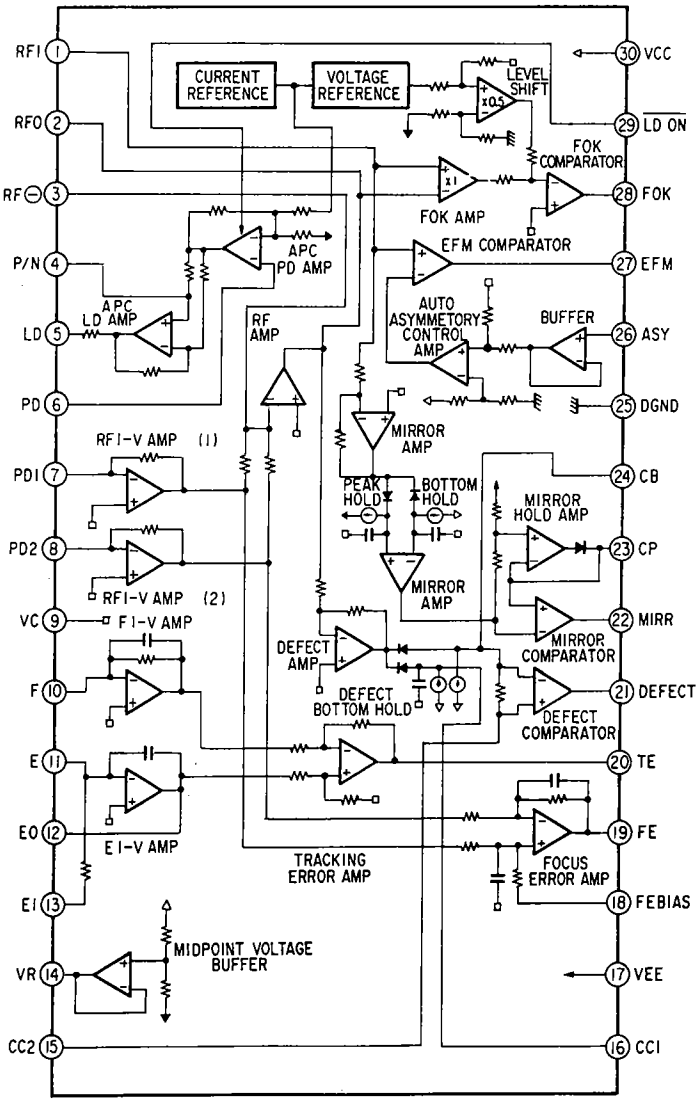
When the system error occurs while in Heat Run mode, the following error message will display on the Track No. indicator and stops operation.

1. E1
   At the time of Focus Servo does not activate.
2. E2
   When unable to detect synchronous pattern however the disc is in rotating. (GFS does not drive.)
3. E3
   No synchronous pattern can be detected while in Play mode. (No GFS drives.)
4. E4
   When TOC is unreadable in despite of servo is activated.
5. E5
   In case of loader malfunctions. (Unable to turn on the switch.)
6. E6
   The inner circle switch of Pick-up does not turn off.
7. E7
   The inner circle switch of Pick-up does not turn on.

★ Also, displays the number of operation up to this time on the Time (Min.) indicator.

IC TERMINAL FUNCTION LIST

CXA1081S



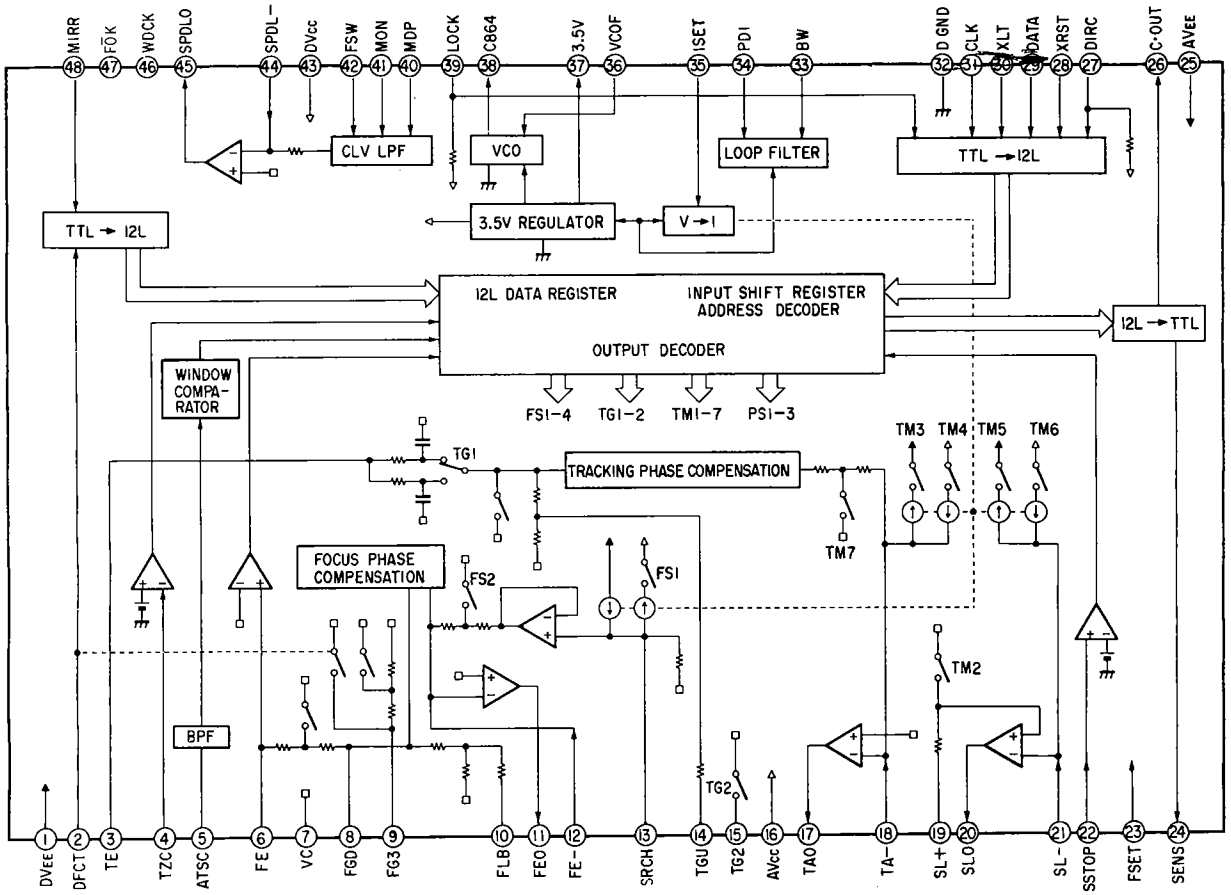
CXA1081S Terminal Function

Terminal No.	Terminal Symbol	I/O	DC voltage (V)	Terminal Function
1	RFI	I	0	Input terminal of capacitance coupled RF summing amplifier output.
2	RFO	O	V_{RFO}	Terminal for RF summing amplifier output. Check point of Eye pattern.
3	RF(–)	I	0	Feedback input terminal of RF summing amplifier.
4	P/N	I	0 (VC)	P-sub/N-sub shifting terminal for Laser Diode (LD). (DC voltage: at N-sub.)
5	LD	O	-1.8	Output terminal of APC (Automatic Power Control) LD amplifier. (DC voltage: at N-sub, PD opened.)
6	PD	I	0	Input terminal of APC (Automatic Power Control) PD amplifier. (DC voltage: opened.)
7	PD1	I	0	Reverse input terminal of RF I-V amplifier (1). Receives a input current through A + C terminals of photo diode.
8	PD2	I	0	Reverse input terminal of RF IV amplifier (2). Receives a input current through B + D terminals of photo diode.
9	VC	–	0	At ± dual-power supply: Becomes GND. At mono-power supply: Becomes VR. (connect to pin 14.)
10	F	I	0	Reverse input terminal of F I-V amplifier. Receives a input current through F terminal of photo diode.
11	E	I	0	Reverse input terminal of E I-V amplifier. Receives a input current through E terminal of photo diode.
12	EO	O	0	Output terminal of E I-V amplifier.
13	EI	I	0	Feedback input terminal of E I-V amplifier. For gain controlling of E I-V amplifier.
14	VR	O	V_{CVO}	Output terminal of DC voltages $(V_{CC} + V_{EE})/2$.
15	CC2	I	1.0	Input terminal of capacitance coupled defect bottom hold output.
16	CC1	O	1.2	Output terminal of defect bottom hold.
17	V_{EE}	–	-2.5	At ± dual-power supply: Becomes negative power supply terminal. At mono-power supply: Becomes GND.
18	FE BIAS	I	0	Bias terminal for non-reverse side of focus error amplifier. For CMR controlling of focus error amplifier.
19	FE	O	V_{FEO}	Output terminal of focus error amplifier.
20	TE	O	V_{TEO}	Output terminal of tracking error amplifier.
21	DEFECT	O	V_{DFCTL}	Output terminal of defect comparator. (DC voltage: Connect a 10 kΩ load resistance.)
22	MIRR	O	V_{MIRL}	Output terminal of MIRR comparator. (DC voltage: Connect a 10 kΩ load resistance.)
23	CP	I	-1.3	Connecting terminal for MIRR hold capacitor. Non-reverse input terminal of MIRR comparator.
24	CB	I	0	Connecting terminal for defect bottom hold capacitor.
25	D GND	–	-2.5	At ± dual-power supply: GND. At mono-power supply: GND (V_{EE}).
26	ASY	I	–	Input terminal of auto-asymmetry control.
27	EFM	O	V_{EFMH}	Output terminal of EFM comparator. (DC voltage: Connect a 10 kΩ load resistance.)
28	FOK	O	V_{FOKL}	Output terminal of focus OK comparator. (DC voltage: Connect a 10kΩ load resistance.)
29	$\overline{\text{LD ON}}$	I	-2.5 (D GND)	ON/OFF shifting terminal for laser diode (LD). (DC voltage: At LD ON.)
30	V_{CC}	–	2.5	Positive power supply terminal.

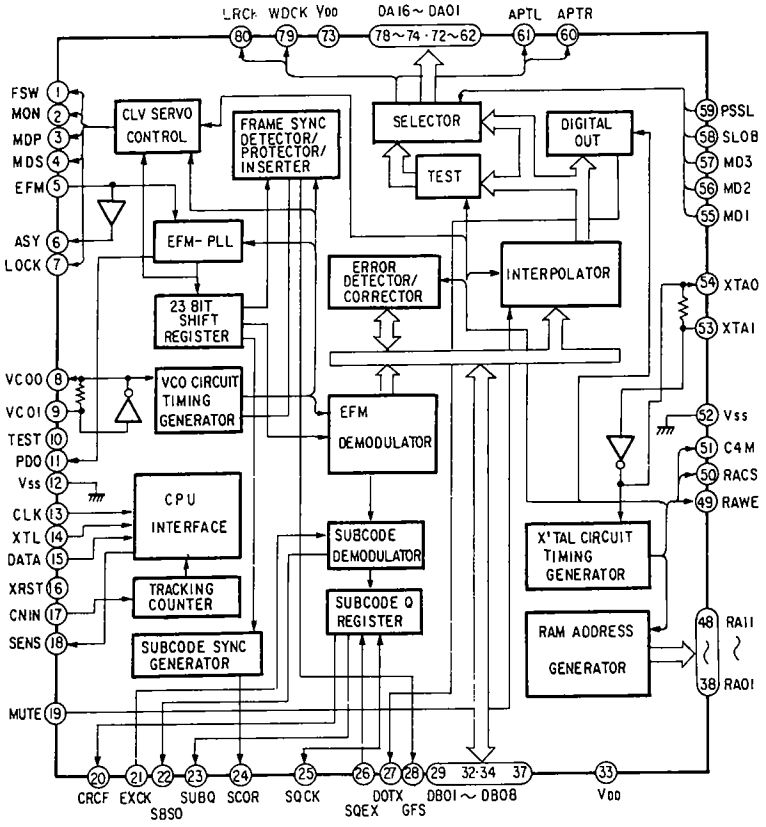
CXA1182AS Terminal Function

Terminal No.	Terminal Symbol	Terminal Function
2	DFCT	Defect signal input terminal. Defect measure circuit activates at "H".
3	TE	Tracking error signal input terminal.
4	TZC	Tracking zero cross comparator input terminal.
5	ATSC	Input terminal of ATSC detecting window comparator.
6	FE	Focus error signal input terminal.
8	FGD	In case of reducing higher range gain of focus servo, connect a capacitor between this terminal and terminal number (9).
9	FS3	Shifts higher range gain of focus servo by FS3 ON/OFF.
10	FLB	Terminal for external time constant to increase lower range of focus servo.
11	FEO	Focus drive output.
12	FE(–)	Reverse input terminal for focus amplifier.
13	SRCH	Terminal for external time constant to make focus search waveform.
14	TGU	Terminal for external time constant to shift higher range gain of tracking.
15	TG2	Terminal for external time constant to shift higher range gain of tracking.
17	TAO	Tracking drive output.
18	TA(–)	Reverse input terminal for tracking amplifier.
19	SL(+)	Non-reverse input terminal of sled amplifier.
20	SLO	Sled drive output.
21	SL(–)	Reverse input terminal of sled amplifier.
22	SSTOP	Terminal for limit switch ON/OFF to detect disc inner most circle.
23	FSET	Terminal to compensate peak in focus tracking phase, and for setting F_O in CLV LPF.
24	SENS	Terminal to output FZC, AS, TZC, SSTOP, $\overline{\text{BUSY}}$ by command from CPU.
26	C. OUT	Terminal to output signal for track number count.
27	DIRC	Terminal is used at the time of 1 track jump. A 47 kΩ pull up resistor is included.
28	XRST	Reset input terminal. Resets at "L".
29	DATA	Serial data input from CPU.
30	XLT	Latch input from CPU.
31	CLK	Serial data transfer clock input from CPU.
33	BW	Terminal for external time constant of loop filter.
34	PDI	Input terminal of PDO for CXD1125 phase comparator.
35	ISET	Delivers a current to set the height of focus search, track jump, and sled kick.
36	VCOF	Resistance value between this terminal and terminal (37) is nearly proportion to VCO free-run frequency.
38	C864	Output terminal of 8.64 MHz VCO.
39	LOCK	Reckless drive protection circuit activates at "L". A 47 kΩ pull up resistor is included.
40	MDP	Terminal to connect MDP terminal of CXD1125.
41	MON	Terminal to connect MON terminal of CXD1125.
42	FSW	Terminal for external LPF time constant of CLV servo error signal.
44	SPDL(–)	Reverse input terminal for spindle drive amplifier.
45	SPDLO	Spindle drive output.
46	WDCK	Clock input for auto-sequence. Normally applied 88.2 kHz.
47	FOK	FOK signal input terminal.
48	MIRR	MIRR signal input terminal.

CXA1182AS



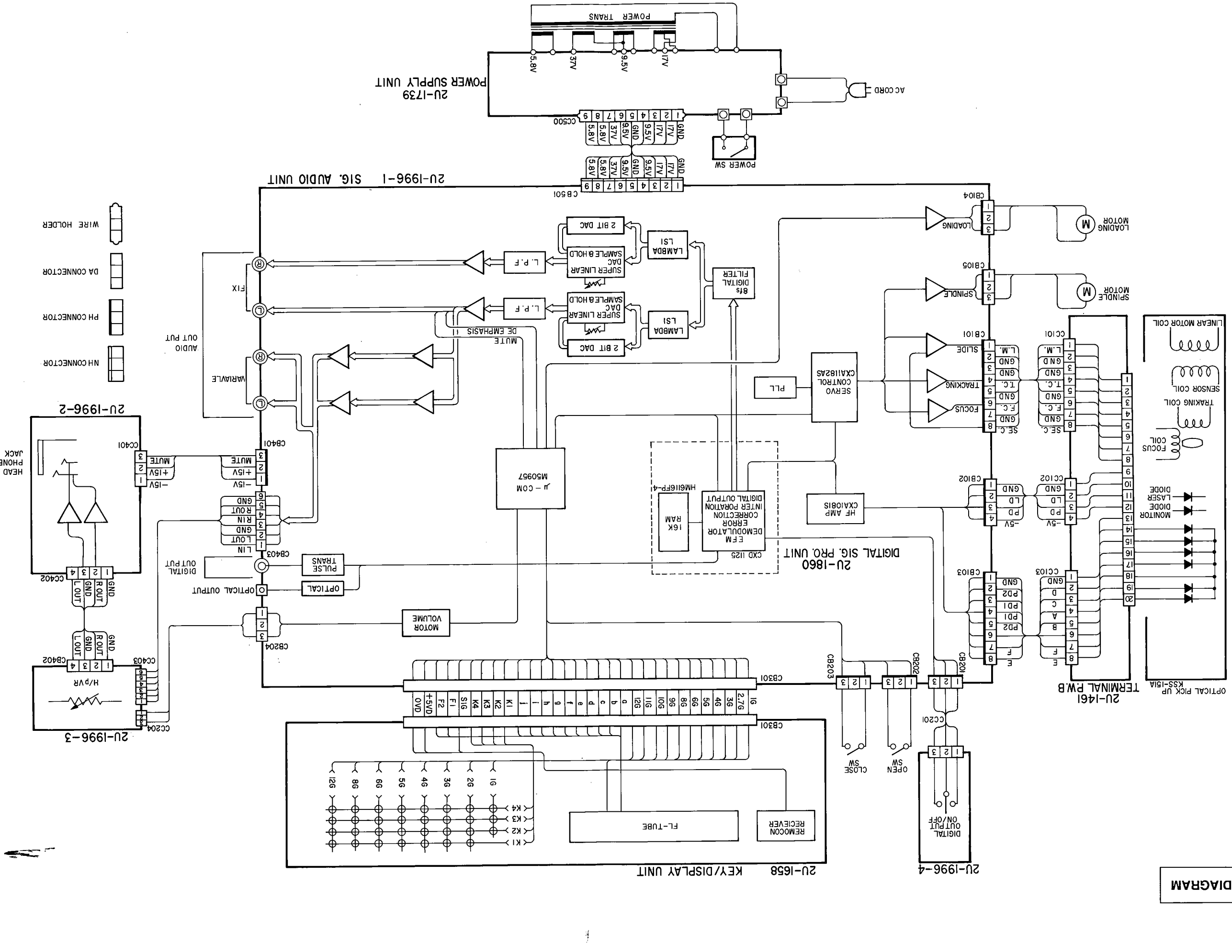
CXD1125Q



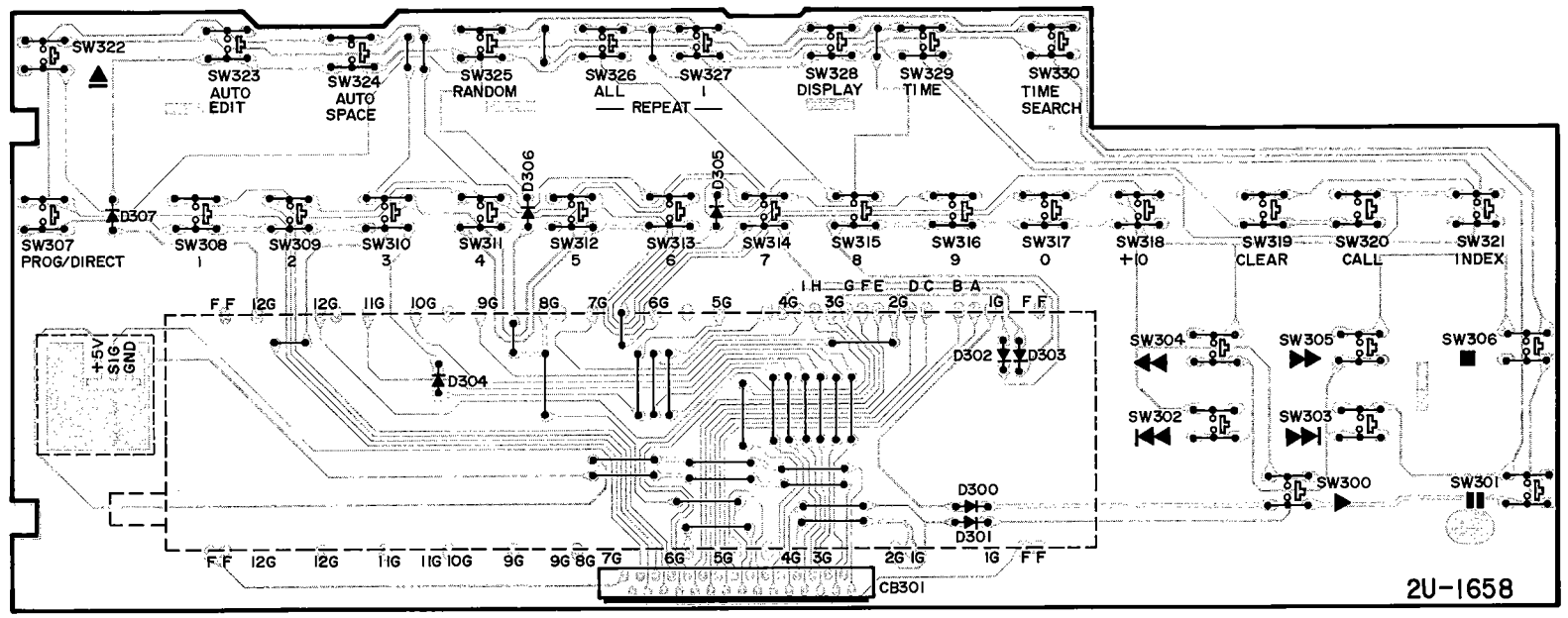
CXD1125Q Terminal Function

Terminal No.	Terminal Symbol	I/O	Terminal Function
1	FSW	O	Output to shift time constant of output filter for spindle motor.
2	MON	O	ON/OFF control output for spindle motor.
3	MDP	O	Drive output for spindle motor. Rough control at CLV-S mode and phase control at CLV-P mode.
4	MDS	O	Drive output for spindle motor. Speed control at CLV-P mode.
5	EFM	I	Input of EFM signal from RF amplifier.
6	ASY	O	Output to control slice level of EFM signal.
7	LOCK	O	Sampling GFS signal by WFCK/16 and if it is "H", delivers "H"; if it is continuously "L" 8 times, delivers "L".
8	VCOO	O	VCO output. When EFM signal is locked, f=8.6436 MHz.
9	VCOI	I	VCO input.
10	TEST	I	(0V).
11	PDO	O	Phase comparing output for EFM signal and VCO/2.
12	Vss	–	GND (0V).
13	CLK	I	Serial data transfer clock input from CPU. Latches data by rising edge of clock.
14	XLT	I	Input of Latch from CPU. Latches 8-bit shift register data (serial data from CPU) to each register.
15	DATA	I	Input of serial data from CPU.
16	XRST	I	System reset input. Resets at "L".
17	CNIN	I	Input of tracking pulse.
18	SENS	O	Answer to address, output internal condition.
19	MUTG	I	Input of muting. When internal register A's ATTM is in "L", and MUTG is in "L" for normal condition; "H" for no sound condition.
20	CRCF	O	Output of CRC check result of sub-code Q.
21	EXCK	I	Clock input for serial output of sub-code.
22	SBSO	O	Serial output of sub-code.
23	SUBQ	O	Q output of sub-code.
24	SCOR	O	Output of sub-code sync. S0 + S1.
25	SQCK	I/O	Reading clock of sub-code Q.
26	SQEX	I	Selection input of SQCK.
27	DOTX	O	Digital out output. (When CXD1130Q or DO is OFF, output $\overline{\text{WFCK}}$.)
28	GFS	O	Output of indication for frame sync lock condition.
29	DB08	I/O	Data terminal of external RAM. DATA8 (MSB).
30	DB07	I/O	Data terminal of external RAM. DATA7.
31	DB06	I/O	Data terminal of external RAM. DATA6.
32	DB05	I/O	Data terminal of external RAM. DATA5.
33	V_{DD}	–	Power supply (+5V).
34	DB04	I/O	Data terminal of external RAM. DATA4.
35	DB03	I/O	Data terminal of external RAM. DATA3.
36	DB02	I/O	Data terminal of external RAM. DATA2.
37	DB01	I/O	Data terminal of external RAM. DATA1 (LSB).
38	RA01	O	Address output of external RAM. ADDR01 (LSB).
39	RA02	O	Address output of external RAM. ADDR02.
40	RA03	O	Address output of external RAM. ADDR03.
41	RA04	O	Address output of external RAM. ADDR04.
42	RA05	O	Address output of external RAM. ADDR05.
43	RA06	O	Address output of external RAM. ADDR06.
44	RA07	O	Address output of external RAM. ADDR07.
45	RA08	O	Address output of external RAM. ADDR08.

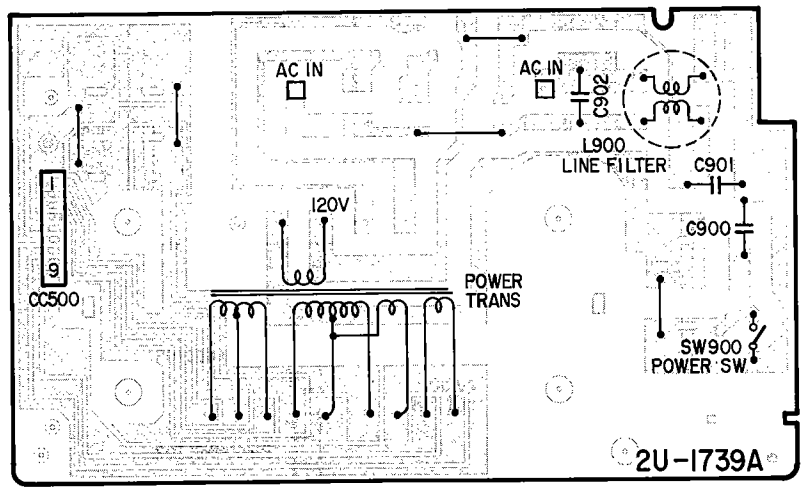
WIRING DIAGRAM



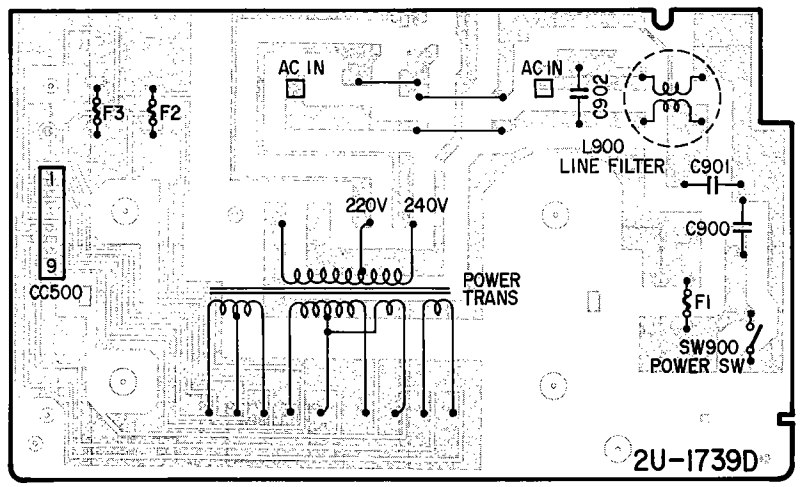
2U-1658 KEY & DISPLAY UNIT



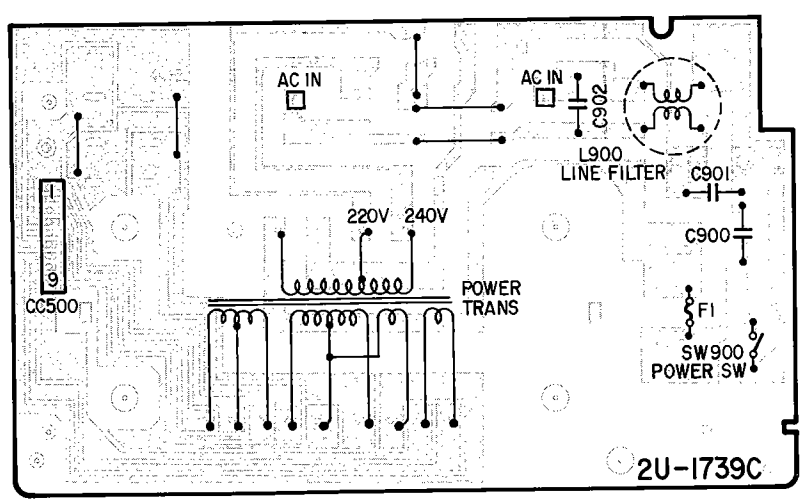
2U-1739A POWER SUPPLY UNIT (U.S.A. & Canada models)



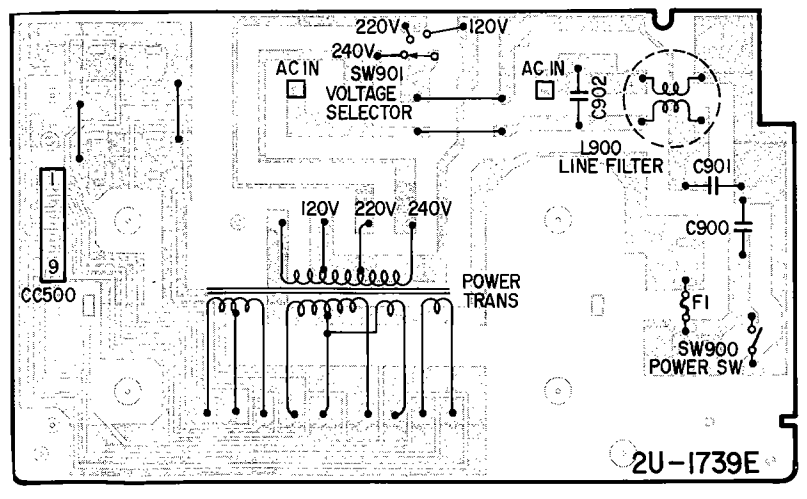
2U-1739D POWER SUPPLY UNIT (Australia & U.K. models)



2U-1739C POWER SUPPLY UNIT (Europe model)

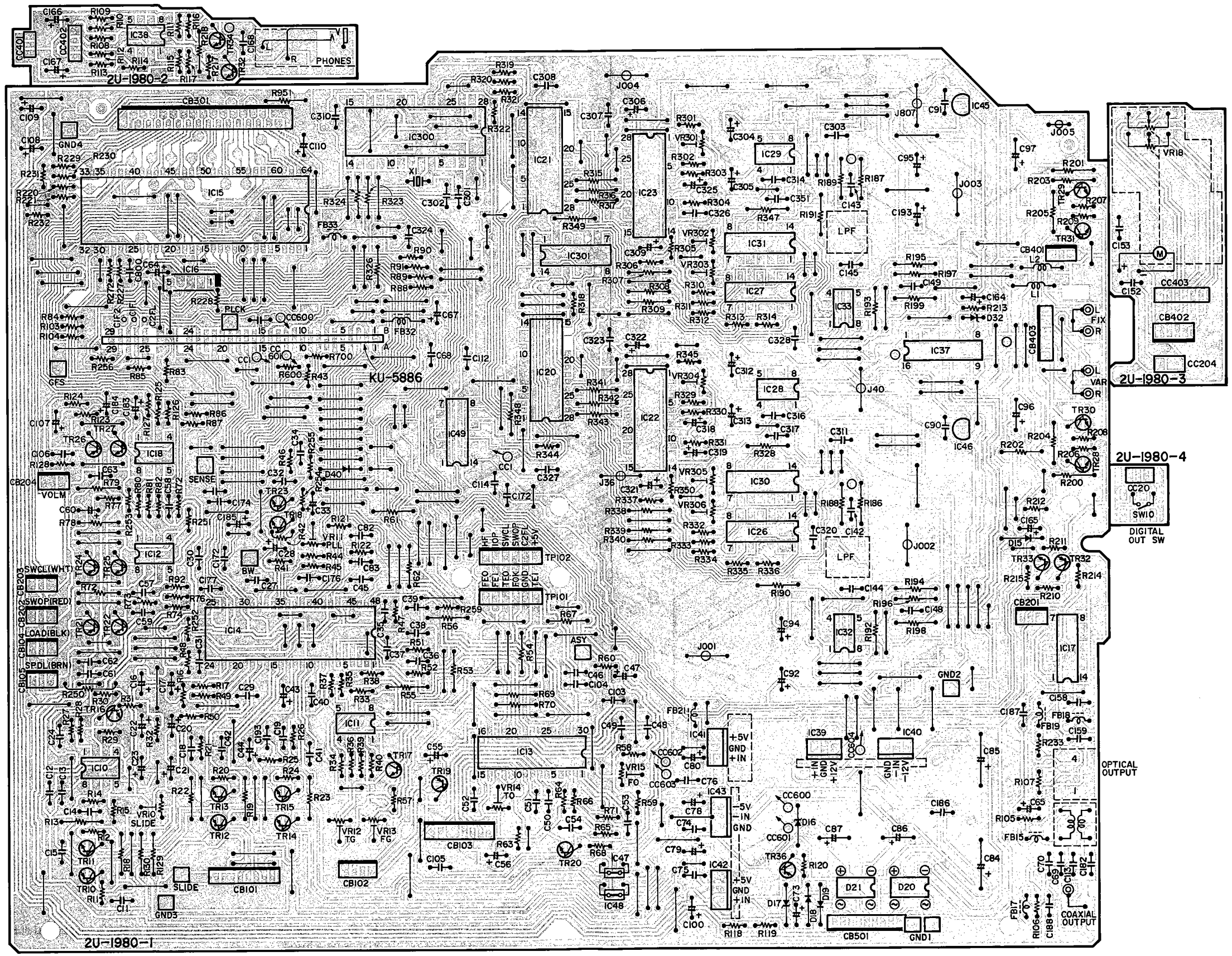


2U-1739E POWER SUPPLY UNIT (Asia model)

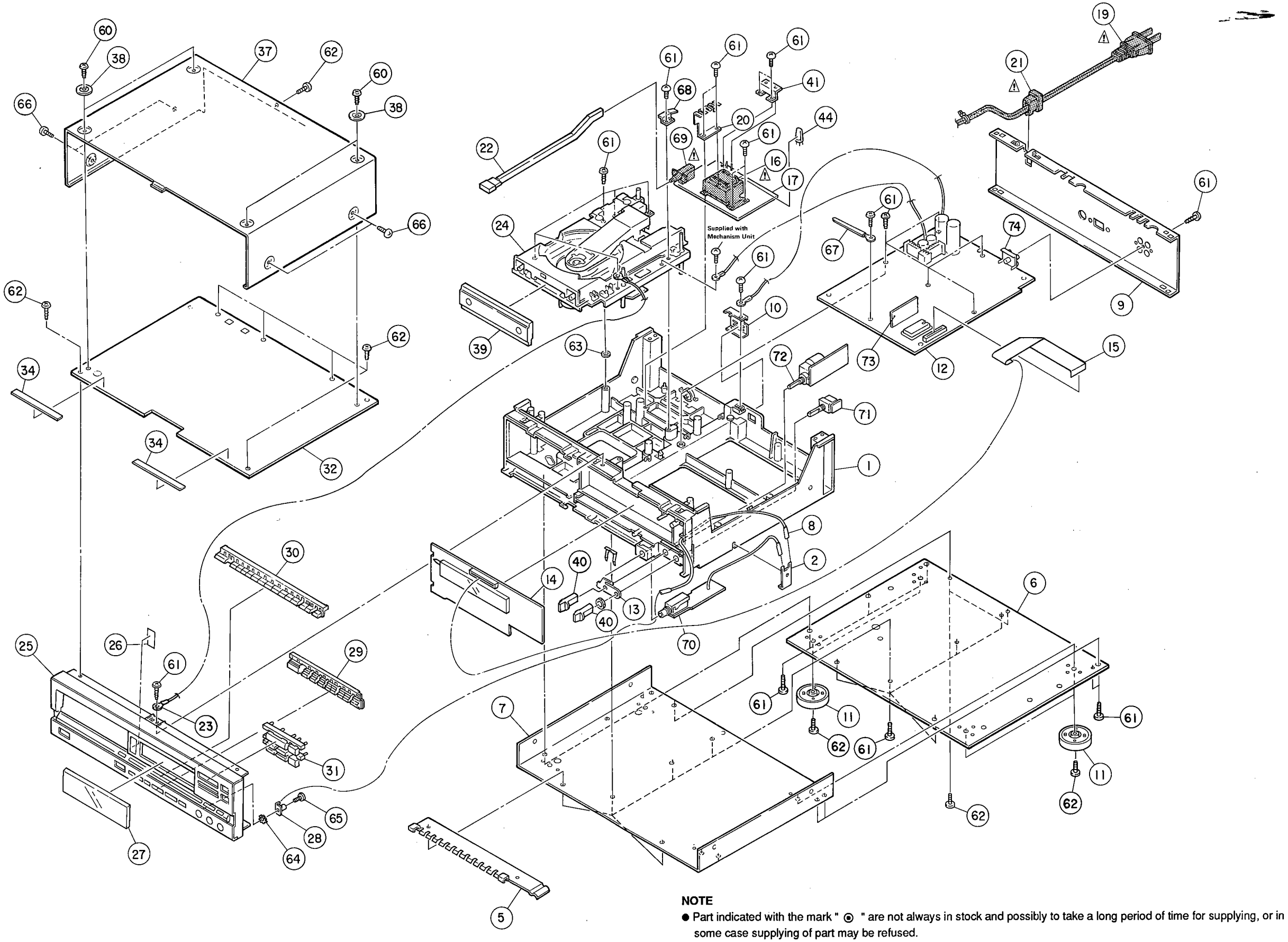


P.W.BOARD

2U-1996 SIGNAL AUDIO UNIT



EXPLODED VIEW



NOTE

- Part indicated with the mark " ⊙ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.

PARTS LIST OF P.W.BOARD

2U-1996 SIG. AUDIO UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTOR GROUP			
IC10~12,18	263 0565 007	BA15218	
IC13	262 0842 002	CXA-1081S	
IC14	262 1008 007	CXA-1182S	
IC15	262 1242 009	M50957-210SP	
IC16	263 0423 000	M51953B	
IC17	262 0729 002	HD74HC08P	
IC20,21	262 1180 006	CF37606	
IC22,23	262 1243 008	PCM1701KP	
IC26,27	262 0591 007	HD74HC00P	
IC28,29	262 0864 006	μPC4570C	
IC30,31	262 1240 001	HD74HC4066	
IC32,33	263 0360 008	NE5532	
IC37	262 0419 008	HD14053BP	
IC38	263 0198 005	NJM4556D	
IC39	263 0651 005	MC7812	
IC40	263 0539 004	NJM79M12FA	
IC41	263 0254 004	NJM78M05A	
IC42	268 0047 009	NJM7805A	
IC43	263 0501 003	NJM79M05FA	
IC45,46	263 0432 004	NJM78L05A	
IC47,48	268 0074 904	ICP-N20T	
IC49	262 0831 000	IC74HC04P	
IC300	262 1128 000	SM5813APA	
IC301	262 0594 004	HD74HC74P	
TR10,24	272 0085 002	2SB941A(Q)/(P)	
TR11,25	274 0123 009	2SD1985(P/Q)	
TR12,14,19 21,26	272 0025 907	2SB562(C)	
TR13,22,27	274 0036 905	2SD468(C)	
TR15	274 0136 009	2SD1913	
TR16,18,20	273 0178 925	2SC1740(R/S)T-70	
TR17	269 0038 901	RN1210(4.7K--)	
TR23,33	269 0025 901	RN1202(10K-10K)	
TR28~31 34,35	273 0253 918	2SC2878(A/B)	
TR32	269 0026 900	RN2202(10K-10K)	
TR36	271 0101 925	2SA933(Q)T-70	
D15,40	276 0049 914	1S2076ATE	
D16	276 0220 908	HZ24TE	
D17	276 0303 906	HZ6C-2TE	
D18,19	276 0552 906	1SR139-200T-32	
D20,21	276 0405 901	1SWB(A)10	
D32	276 0460 904	HZS5C-1TD	
RESISTOR GROUP			
VR10,303 306	211 6064 019	V06PB473	47Kohm
VR11	211 6064 064	V06PB102	1Kohm
VR12~14	211 6064 051	V06PB203	20Kohm
VR15	211 6064 006	V06PB103	10Kohm
VR301,302 304,305	211 6064 022	V06PB104	100Kohm
VR18	211 0544 108	V1620V25FA103M	10Kohm
R250	244 2051 042	RS14B3A010JF(S)	1ohm/1W

Ref. No.	Part No.	Part Name	Remarks
CAPACITOR GROUP			
Ceramic			
C11~13 29,30,45 57,61,62 74~76 90,91 103~105 112,152 153,158 159,168 174,303 307,308 310,311 320,323 327,328 900	253 9028 904	CK45=1E104MT	0.1μF 25V
C18,35,59 63,181 187,317 351	253 3627 000	CC45SL1H101J	100PF 50V
C32,175 324	253 1004 007	CK45B1H102K	0.001μF 50V
C46,68 69,177 186	253 1024 003	CK45F1H103Z	0.01μF 50V
C50,51 106	253 3603 008	CC45SL1HJ100D	10PF 50V
C54	253 3617 007	CC45SL1H390J	39PF 50V
C182	253 3599 002	CC45SL1H060D	6PF 50V
C188	253 3643 000	CC45SL1H471J	470PF 50V
C193	253 4443 908	CC45SL1H201J	200PF 50V
C301,302	253 4535 955	CC45SL1H050C	5PF 50V
Electrolytic			
C16,17	254 4260 951	CE04W1H2R2M	2.2μF 50V
C20,21,56 306,309 318,319 321,322 325,326	254 4260 964	CE04W1H3R3M	3.3μF 50V
C22,23 33,43	254 4254 912	CE04W1C220M	22μF 16V
C28,60 107	254 4260 948	CE04W1H010M	1μF 50V
C44,65	254 4254 925	CE04W1C330M	33μF 16V
C47	254 4260 935	CE04W1HR47M	0.47μF 50V
C55 78~80 183,184	254 4254 941	CE04W1C101M	100μF 16V
C64	254 4260 919	CE04W1HR22M	0.22μF 50V
C67	254 4252 930	CE04W1A101M	100μF 10V
C73	254 4262 946	CE04W1J470M	47μF 63V
C84,85	254 4289 783	CE04W1H222MC	2200μF 50V
C86,87	254 4255 704	CE04W1C332MC	3300μF 16V
C92,93,95	254 4307 704	CE04W1H101MC	100μF 50V
C94	254 4254 792	CE04W1C222MC	2200μF 16V
C96,97	254 4307 717	CE04W1H471MC	470μF 50V
C100	254 4261 921	CE04W1H101M	100μF 50V
C108,109	254 4261 905	CE04W1H330M	33μF 50V
C110	254 4254 967	CE04W1C331M	330μF 16V
C164	254 4256 907	CE04W1E100M	10μF 25V
C165	254 4256 952	CE04W1E221M	220μF 25V
C166,167	254 4256 949	CE04W1E101M	100μF 25V
C185	254 4254 909	CE04W1C100M	10μF 16V
C304,305 312,313	254 4289 738	CE04W1H101MC	100μF 50V
Film			
C14	255 1121 041	CQ93M1H153J	0.015μF 50V
C19	255 1120 097	CQ93M1H562J	0.0056μF 50V
C24,36 49	255 1120 068	CQ93M1H332J	0.0033μF 50V
C27	255 1120 084	CQ93M1H472J	0.0047μF 50V
C31,38 48,83	255 1121 025	CQ93M1H103J	0.01μF 50V
C34	255 1120 000	CQ93M1H102J	0.001μF 50V
C39	255 1120 042	CQ93M1H222J	0.0022μF 50V
C53	255 1120 055	CQ93M1H272J	0.0027μF 50V
C142,143	255 4210 069	CQ09P1H331J	330PF 50V
C144,145	255 4222 934	CQ92M1H182J	0.0018μF 50V
C148,149	255 1251 940	CQ92M1H472J	0.0047μF 50V
C314,316	255 4235 921	CQ93P2A271J	270PF 100V
C317,351	255 4232 034	CQ93P2A102JC	0.001μF 100V
Metalized			
C15	256 1034 047	CF93A1H563J	0.056μF 50V
C40,82	256 1034 076	CF93A1H104J	0.1μF 50V
C41,52	256 1034 018	CF93A1H333J	0.033μF 50V
C42	256 1034 050	CF93A1H683J	0.068μF 50V
C58	256 1034 092	CF93A1H154J	0.15μF 50V
OTHER PARTS			
X1	399 0036 013	CRYSTAL (16.9344MHz)	
FB15 17~19 21,31 33	235 0049 900	BEAD INDUCTOR	
FB32	235 0049 007	BEAD INDUCTOR	VDE
	269 0052 000	TOTX 172	OPTICAL OUT
	204 8256 005	1P PIN JACK	DIGITAL OUT
	204 8265 009	4P RCA PIN JACK	LINE OUT
	204 8271 006	HEADPHONE JACK	
	235 0061 001	LPF COIL	
	235 0048 008	EMI FILTER	
SW10	212 4700 006	ROTARY SWITCH	
TP101,102	205 0190 065	6P NH CONN. BASE	
CB101	205 0321 083	8P CONN. BASE (RED)	

Ref. No.	Part No.	Part Name	Remarks
CB102,402	205 0343 045	4P CONN. BASE (KR-PH)	
CB103	205 0343 087	8P CONN. BASE (KR-PH)	
CB104	205 0323 036	3P CONN. BASE (BLK)	
CB105	205 0322 037	3P CONN. BASE (BLUE)	
CB201,203 204,401	205 0343 032	3P CONN. BASE (KR-PH)	
CB202	205 0321 038	3P CONN. BASE (RED)	
CB301	205 0491 007	30P FFC CONN. BASE	
CB403	205 0343 061	6P CONN. BASE (KR-PH)	
CB501	205 0343 090	9P CONN. BASE (KR-PH)	
CC201	203 4514 007	3P PH-SAN CONN. CORD	TO CB201
CC204	203 4522 015	3P PH-SAN CONN. CORD	TO CB204
CC401	203 4523 001	3P PH-SAN CONN. CORD	TO CB401
CC402	203 6240 007	4P KR-DA CONN. CORD	TO CB402
CC403	203 8226 003	6P PH-SAN CONN. CORD	TO CB403
L001,002	235 0016 920	INDUCTOR (470K)	
	231 8060 002	PULSE TRANS	

2U-1860 DIGITAL SIG.PRO.UNIT

Ref. No.	Part No.	Part Name	Remarks
IC1	262 0736 008	CXD1125	
IC2	262 0673 006	HM6116FP/LFP-4/3/2	
C3	253 1024 003	CK45F1H103Z	0.01μF 50V
C4	254 4254 051	CE04W1C221M	220μF 16V
	479 0005 007	PUSH RIVET	
	414 0493 007	SHIELD SHEET	

2U-1658 KEY & DISPLAY UNIT

Ref. No.	Part No.	Part Name	Remarks
D300~307	276 0432 000	1SS270A	
	212 4388 907	TACT SWITCH	
	499 0088 002	QH3031HO	REMOCON. RECEIVER
	393 4059 001	F1P11BJM7	FL TUBE
CB301	205 0491 007	30P FFC CONN. BASE	
	009 0013 007	30P FFC	FLAT CABLE

Terminal No.	Terminal Symbol	I/O	Terminal Function
46	RA09	O	Address output of external RAM. ADDR09.
47	RA10	O	Address output of external RAM. ADDR10.
48	RA11	O	Address output of external RAM. ADDR11.
49	RAWE	O	Write enable signal output for external RAM. (Active at "L".)
50	RACS	O	Chip select signal output for external RAM. (Active at "L".)
51	C4M	O	Dividing output of X'tal. f = 4.2336 MHz.
52	V_{SS}	–	GND (0V).
53	XTAI	I	X'tal oscillation circuit input. By selecting of mode, f = 8.4672 MHz or 16.9344 MHz.
54	XTAO	O	X'tal oscillation circuit output. By selecting of mode, f = 8.4672 MHz or 16.9344 MHz.
55	MD1	I	Mode selection input 1.
56	MD2	I	Mode selection input 2.
57	MD3	I	Mode selection input 3.
58	SLOB	I	Code switching input for audio data output. At "L" for 2's compliment output; at "H" for offset binary output.
59	PSSL	I	Mode switching input for audio data output. At "L" for serial output; at "H" for parallel output.
60	APTR	O	Control output for aperture compensation. In "H" for R-ch.
61	APTL	O	Control output for aperture compensation. In "H" for L-ch.
62	DA01	O	At PSSL = "H" for DA01 (LSB of parallel voice data) output. At PSSL = "L" for C1F1 output.
63	DA02	O	At PSSL = "H" for DA02 output; PSSL = "L" for C1F2 output.
64	DA03	O	At PSSL = "H" for DA03 output; PSSL = "L" for C2F1 output.
65	DA04	O	At PSSL = "H" for DA04 output; PSSL = "L" for C2F2 output.
66	DA05	O	At PSSL = "H" for DA05 output; PSSL = "L" for C2FL output.
67	DA06	O	At PSSL = "H" for DA06 output; PSSL = "L" for C2PO output.
68	DA07	O	At PSSL = "H" for DA07 output; PSSL = "L" for RFCK output.
69	DA08	O	At PSSL = "H" for DA08 output; PSSL = "L" for WFCK output.
70	DA09	O	At PSSL = "H" for DA09 output; PSSL = "L" for PLCK output.
71	DA10	O	At PSSL = "H" for DA10 output; PSSL = "L" for UGFS output.
72	DA11	O	At PSSL = "H" for DA11 output; PSSL = "L" for GTOP output.
73	V_{DD}	–	Power supply (+5V).
74	DA12	O	At PSSL = "H" for DA12 output; PSSL = "L" for RAOV output.
75	DA13	O	At PSSL = "H" for DA13 output; PSSL = "L" for C4LR output.
76	DA14	O	At PSSL = "H" for DA14 output; PSSL = "L" for $\overline{C21O}$ output.
77	DA15	O	At PSSL = "H" for DA15 output; PSSL = "L" for C21O output.
78	DA16	O	At PSSL = "H" for DA16 (MSB of parallel voice data) output. At PSSL = "L" for DATA output.
79	WDCK	O	Strobe signal output. At DF ON, 176.4 kHz. At CXD1125Q or DF OFF, 88.2 kHz.
80	LRCK	O	Strobe signal output. At DF ON, 88.2 kHz. At CXD1125Q or DF OFF, 44.1 kHz.

Note:

C1F1: ┐ Monitor output for error correction state what C1 is at
C1F2: ┘ decode.

C2F1: ┐ Monitor output for error correction state what C2 is at
C2F2: ┘ decode.

C2FL: Correction state output. Becomes "H" when C2 system in which presently under correction is unable to correct.

C2PO: C2 pointer indication output. Synchronizes with audio data output.

RFCK: Read frame clock output. 7.35 kHz of X'tal system.

WFCK: Write frame clock output. 7.35 kHz when locked on to X'tal system.

$\overline{PLCK}$: VCO/2 output. When locked to EFM signal, f = 4.3218 MHz.

UGFS: Output of unprotected frame sync pattern.

GTOP: Indication output of frame synchro in protected condition.

RAOV: Overflow and underflow indication outputs of ±4 frame jitter absorbing RAM.

C4LR: Strobe signal. At DF ON, 352.8 kHz. At CXD1125Q or DF OFF, 176.4 kHz.

$\overline{C21O}$: Reverse output of C210.

C21O: Bit clock output. At DF ON, 4.2336 MHz. At CXD1125Q or DF OFF, 2.1168 MHz.

DATA: Serial data output of audio signal.

2U-1739A POWER SUPPLY UNIT (U.S.A./Canada)

Ref. No.	Part No.	Part Name	Remarks
⚠ L900	239 8019 002	LINE FILTER COIL	
⚠ C900~902	253 8014 702	CK45F2GAC103MC	0.01μF 400V
⚠ SW900	212 4697 009	POWER SWITCH	
⚠ CC500	204 2294 005	9P PH-SAN CONN.	
		CORD	

2U-1739D POWER SUPPLY UNIT (Australia/U.K.)

Ref. No.	Part No.	Part Name	Remarks
⚠ L900	239 8019 002	LINE FILTER COIL	
	415 0299 000	CONDENSER COVER	
⚠ C900~902	253 8014 003	CK45F2GAC103M	0.01μF 400V
	202 0022 008	FUSE HOLDER	
⚠ F1	206 1029 002	FUSE (0.2AT)	
⚠ SW900	212 4697 009	POWER SWITCH	
⚠ CC500	204 2294 005	9P PH-SAN CONN	
		CORD	
⚠ F2,3	206 1015 003	FUSE (500 MAT)	

2U-1739C POWER SUPPLY UNIT (Europe)

Ref. No.	Part No.	Part Name	Remarks
⚠ L900	239 8019 002	LINE FILTER COIL	
	415 0299 000	CONDENSER COVER	
⚠ C900~902	253 8014 003	CK45F2GAC103M	0.01μF 400V
⚠	202 0022 008	FUSE HOLDER	
⚠ F1	206 1029 002	FUSE (0.2AT)	
⚠ SW900	212 4697 009	POWER SWITCH	
⚠ CC500	204 2294 005	9P PH-SAN CONN	
		CORD	

2U-1739E POWER SUPPLY UNIT (Asia)

Ref. No.	Part No.	Part Name	Remarks
⚠ L900	239 8019 002	LINE FILTER COIL	
	415 0299 000	CONDENSER COVER	
⚠ C900~902	253 8014 003	CK45F2GAC103M	0.01μF 400V
⚠	202 0022 008	FUSE HOLDER	
⚠ F1	206 1029 002	FUSE (0.2AT)	
⚠	212 4698 008	VOLTAGE	
		SELECTOR (D)	
⚠ SW900	212 4697 009	POWER SWITCH	
⚠ CC500	204 2294 005	9P PH-SAN CONN	
		CORD	

NOTE FOR PARTS LIST

- Part indicated with the mark " ⊙ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

• Resistors

Ex.: RN 14K 2E 182 G FR

Type / Shape and performance / Power / Resistance / Allowable error / Others

RD : Carbon	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Fixed	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metallic film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

★ **Resistance**

1 8 2 ⇨ 1800Ω = 1.8kΩ

- 2 — Indicates number of zeros after effective number
- 1 8 — 2-digit effective number, decimal point indicated by R.
- Units: Ω

• Capacitors

Ex.: CE 04W 1H 2R2 M BP

Type / Shape and performance / Dielectric strength / Capacity / Allowable error / Others

CE : Aluminum foil electrolyte	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolyte	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolyte	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80% −20%	U : UL part
CP : Oil	2A : 100V	P : +100% −0%	C : CSA part
CM : Mica	2B : 125V	C : ±0.25pF	W : UL-CSA type
CF : Metallized	2C : 160V	D : ±0.5pF	F : Lead wire forming
CH : Metallized	2D : 200V	= : Others	
	2E : 250V		
	2H : 500V		
	2J : 630V		

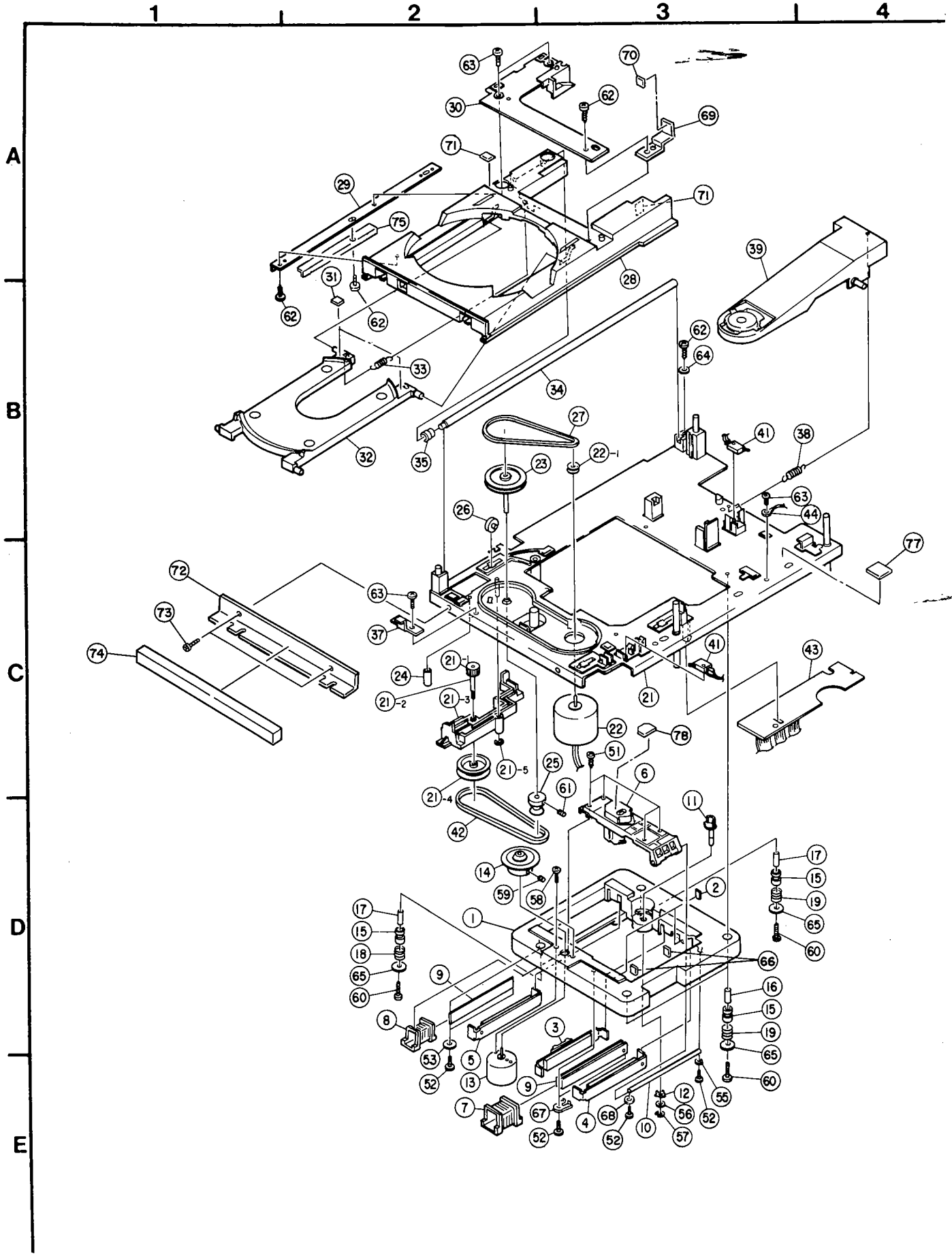
★ **Capacity**

2 R 2 ⇨ 2.2μF

- R — 1-digit effective number, decimal point indicated by R.
- 2 — 2-digit effective number, decimal point indicated by R.

- Units: μF, (for P, pF (μμF)
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

EXPLODED VIEW OF FG-611 MECHA UNIT



PARTS LIST OF FG-611 MECHANISM UNIT

Ref. No.	Part No.	Part Name	Remarks
1	315 0338 302	P.U. HOUSING	
2	461 0336 005	STOPPER	
3	PM01A15	MAGNET SUB ASS'Y	
4	PM01A20	MAGNET SUB ASS'Y	
5	PM01A21	MAGNET SUB ASS'Y (C)	
6	499 0078 009	PICK-UP KSS151A	
7	239 0014 209	M. COIL ASS'Y	
8	239 0015 208	G. COIL ASS'Y	
9	433 0480 008	YOKE (B)	
10	443 0617 302	P.U. SHAFT	
11	421 0431 300	STOPPER COLLAR	
12	315 8451 003	FRICTION WASHER	
13	217 0159 009	SPINDLE MOTOR	
14	421 0423 208	TURNTABLE	
15	462 0083 005	H. DAMPER	
16	433 0484 004	COLLAR (A)	
17	433 0485 100	COLLAR (B)	
18	463 0514 001	COIL SPRING (C)	
19	463 0515 000	COIL SPRING (D)	
21	411 0813 002	BASE PLATE ASS'Y	
21-1	—	DRIVE GEAR	
21-2	—	GEAR SHAFT	
21-3	—	LOCK ARM	
21-4	—	GEAR PULLEY	
21-5	476 1001 001	2E RING	
22	PLO1A34	LOADING M. SUB ASS'Y	
22-1	—	MOTOR PULLEY	
23	421 0439 108	GEAR PULLEY ASS'Y	
24	462 0084 020	TUBE	
25	421 0425 002	MOTOR PULLEY	
26	425 0170 003	SLIDER ROLLER	
27	423 0046 102	BELT (A)	
28	431 0267 403	LOADER FRAME	
29	412 2177 105	LOADER BRACKET	
30	411 0664 400	LOADER GUIDE	
31	122 0110 083	HIMERON SHEET	
32	431 0284 004	DISC TRAY ASS'Y	
33	463 0574 009	DISC TRAY SPRING	
34	443 0621 000	LOADER RAIL	
35	462 0084 004	TUBE	
36	—	—	
37	412 2512 003	BRACKET	
38	463 0598 001	CLAMPER SPRING	
39	PC01A37	CLAMPER ARM ASS'Y	
40	—	—	
41	212 4650 004	LEAF SW	
42	423 0047 004	BELT (B)	
43	2U-1461A	TERMINAL UNIT	
44	203 0241 060	1P CONTACT ASS'Y	
51	473 8010 009	M1.7x4 #D (W) ZNB	
52	473 8014 005	3x8 CBTS (H-L) ZND	
53	475 1140 008	3 WASHER	
54	—	—	
55	475 1106 042	WASHER	
56	475 1005 017	4W BKNI	
57	441 0856 002	G-RING	
58	471 3103 025	2x6 CBS BK	
59	474 4300 004	2.6x4 BSS (A)	
60	471 1807 022	3x18 CPS BK	
61	474 4300 033	2.6x6 BSS (A)	
62	473 7508 017	3x10 CTBS (P)-B	
63	475 7002 005	3x6 CBTS (S)-Z	
64	475 1005 004	4W	
65	412 2296 002	F-COVER	
66	441 1002 004	SPACER	
67	441 0993 004	YOKE HOLDER	
68	441 0857 001	P-RING	
69	441 0994 003	STOPPER BRACKET	
70	461 0336 005	STOPPER	
71	122 0163 001	SPACER (M)	
72	441 0992 005	FRONT BRACKET	
73	473 7016 020	2.6x5 CBTS (S)-B	
74	461 0437 001	FRONT CUSHION	
75	412 2589 007	LOADER SPACER	
76	—	—	
77	125 0019 028	SPACER	
78	441 1129 000	P.U. PLATE	

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
1	103 1108 608	CHASSIS	
1	103 1108 611	CHASSIS	U.S.A.
2	412 2570 003	EARTH PLATE (C)	
3	—	—	
4	—	—	
5	412 2585 108	EARTH PLATE	
6	105 0880 101	BOTTOM COVER (A)	
7	105 0781 307	BOTTOM COVER (B)	
8	203 0358 005	EARTH WIRE (C)	
9	105 0782 403	BACK PANEL	Europe, Australia, U.K., U.S.A., Canada
9	105 0782 416	BACK PANEL	Asia
10	412 2584 109	EARTH BRACKET (B)	
11	104 0194 001	FOOT ASS'Y	
12	2U-1980	SIG. AUDIO UNIT	Europe, Asia, U.K., Australia
12	2U-1996	SIG. AUDIO UNIT	U.S.A., Canada
13	412 2569 001	EARTH PLATE (V)	
14	2U-1658	KEY/DISPLAY UNIT	
15	009 0013 007	30P FFC	
⚠ 16	233 5686 003	POWER TRANS	Europe, U.K., Australia
⚠	233 5684 005	POWER TRANS	U.S.A., Canada
⚠	233 5700 002	POWER TRANS	Asia
⚠ 17	2U-1739A	POWER S. UNIT	U.S.A., Canada
⚠	2U-1739C	POWER S. UNIT	Europe
⚠	2U-1739D	POWER S. UNIT	Australia, U.K.
⚠	2U-1739E	POWER S. UNIT	Asia
18	—	—	
⚠ 19	206 2063 009	AC CORD	Europe
⚠	206 2061 001	AC CORD	U.S.A., Canada
⚠	206 2025 005	AC CORD	Australia
⚠	206 2024 006	AC CORD	U.K.
⚠	200 6031 026	AC CORD	Asia
20	412 2568 002	EARTH PLATE (T)	
21	445 0056 008	CORD BUSH	
22	113 1067 238	P. SW. LEVER ASS'Y	
22	113 1067 254	P. SW. LEVER ASS'Y	(Gold)
23	203 0324 055	1P CONTACT ASS'Y	
24	FG611	CD MECH. UNIT	
25	144 1953 003	FRONT PANEL ASS'Y	
25	144 1953 016	FRONT PANEL ASS'Y	(Gold)
26	143 0563 006	REMOTE SHEET	
27	143 0554 206	WINDOW	
28	412 2571 002	EARTH PLATE (K)	
29	113 1070 209	KNOB SERIES	
29	113 1070 212	KNOB SERIES	(Gold)
30	113 1069 207	TENKEY KNOB	
30	113 1069 210	TENKEY KNOB	(Gold)
31	113 1071 305	FUNCTION KNOB ASS'Y	
31	113 1071 318	FUNCTION KNOB ASS'Y	(Gold)
32	102 0339 200	TOP COVER (C)	
33	—	—	
34	129 0134 002	DUMPER (B)	
35	—	—	
36	—	—	
37	102 0340 008	TOP COVER (A)	
37	102 0340 011	TOP COVER (A)	(Gold)
38	146 0772 003	TOP COVER WASHER	
38	146 0772 016	TOP COVER WASHER	(Gold)
39	144 1952 004	LOADER PANEL ASS'Y	
39	144 1952 017	LOADER PANEL ASS'Y	(Gold)
40	112 0475 035	H/P KNOB	
40	112 0475 051	H/P KNOB	(Gold)
41	441 1030 005	CLAMP SHEET (B)	Europe
44	212 4698 008	VOLTAGE SELECTOR (D)	Asia
60	473 7508 017	3x10 CBTS (P)-B	
60	473 7510 005	3x10 CBTS (P)-N	(Gold)
61	473 7508 017	3x10 CBTS (P)-B	
62	473 7015 018	3x8 CBTS (S)-B	
63	477 0231 024	4W (S)	
64	475 3201 000	3TWB	
65	473 7500 002	3x 6 CBTS (P)-Z	
66	473 7503 038	4x10 CTTS (P)-B	
66	473 7503 041	4x10 CTTS (P) NI	(Gold)
67	EP6214	CORD HOLDER	
68	412 2657 104	LOADER SPRING	
⚠ 69	212 4697 009	POWER SWITCH	
70	204 8271 006	HEADPHONE JACK (AU)	
71	212 4700 006	ROTARY SWITCH	
72	211 0544 108	V1620V25FA103M	
73	2U-18606	DIGITAL SIG-PRO. UNIT	
74	204 8265 009	4P RCA PIN JACK	

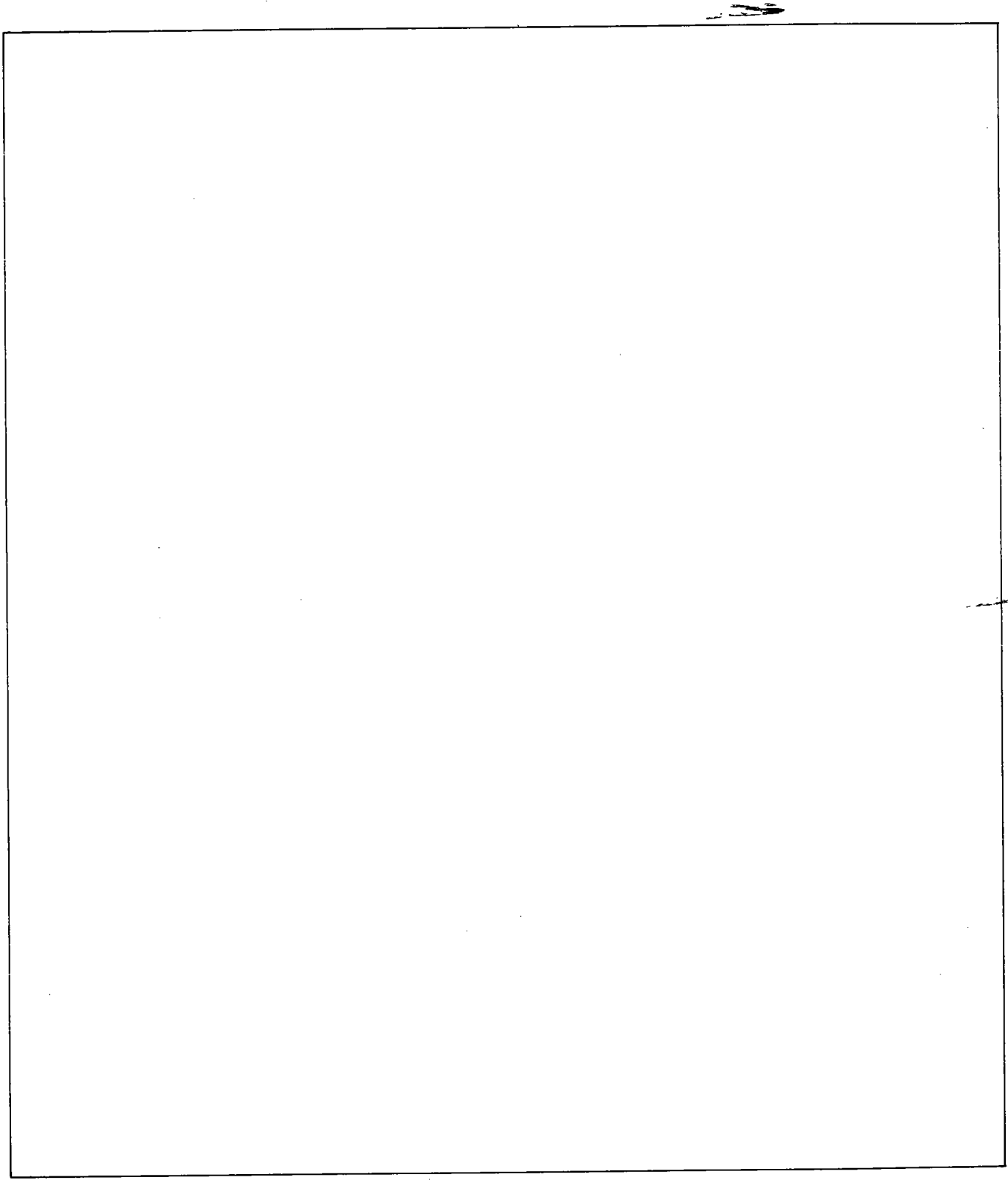
WARNING:

- Parts marked with ⚠ and/or shading have special characteristics important to safety.
  Be sure to use the specified parts for replacement.
- (Gold) in the Remarks column refers models with Gold front panels.

PARTS LIST OF PACKING & ACCESSORIES

Ref. No.	Part No.	Part Name	Remarks
	505 0131 076	CABINET COVER	
	503 0698 102	CUSHION (L)	
	503 0699 101	CUSHION (R)	
	501 1405 000	CARTON CASE	
	505 0038 030	POLY COVER	
	511 1925 008	INST MANUAL (E2)	European, U.K., Asia, Australia, Canada
	511 1926 007	SWEDISH INST MANUAL	European, Asia, Canada
	204 8121 004	2P PIN CORD	
	529 0073 004	MINI DRIVER	
	499 0103 000	RC-211	
	513 1389 006	CONTROL CARD BASE	
	513 1349 004	THERMAL CARBON FILM	
	203 3667 007	PLUG ADAPTER	Asia
	513 0985 003	INST LABEL	
	513 1220 000	CAUTION LABEL	European, U.K., Australia, Canada, U.S.A.
	513 8294 000	VDE LABEL	European
	511 1929 004	INST MANUAL (EU)	U.S.A.
	515 8030 008	PRESET LABEL	Asia
	515 0418 301	DAI WARRANTY HOME	U.S.A.
	515 0439 102	SAFETY INSTRUCTION	U.S.A.
	515 0388 004	DCI WARRANTY	Canada
	513 8253 009	APPROVAL MARK	European
	513 1592 000	E2 RATING SHEET	European
	513 1284 004	E2 LASER CAUTION	European
	513 1397 179	EU SERIAL NO. SHEET	U.S.A.
	513 1381 004	MANUFAC. DATE LABEL	U.S.A., Canada
	513 8266 009	DANGEROUS MARK	U.S.A., Canada
	513 1485 052	EU RATING SHEET	Canada
	513 1138 105	CSA CERTIF LABEL	Canada
	513 0209 019	NOTICE SHEET	Australia
	513 1494 056	EK RATING SHEET	Australia, U.K.
	513 0985 003	INST LABEL	European, U.K., Australia
	513 1491 075	E1 RATING SHEET	Asia
	515 0359 004	CAUTION SHEET	Asia
	203 3667 007	PLUG ADAPTER	Asia

DENON



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